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WALL ST. BLOCKS IM TRAFFIC FLOW

Message tracking, storage pose problems

BY LUCAS MEARIAN

Instant messaging has become a popular means for financial advisers to communicate with clients. But now regulations governing electronic communications are prompting some financial services firms to shut down IM traffic until it can be tracked and stored like regular e-mail.

"There are a lot of firms that would like to use this technology [for business transactions]," said John R. Hewitt, an attorney at Mayer, Brown & Platt's

REGULATORY HURDLES

New York office who advises investment banks and electronic brokerages. "[But] it's not an e-mail, it's not a telephone conversation, and no one quite knows how it's going to be interpreted."

The Securities and Exchange Commission and the National Association of Securities Dealers Inc. currently identify e-mail and IM traffic as communications with the public that must be monitored and saved by companies.

Hewitt said that the SEC, under new Chairman Harvey Pitt, is reviewing its guidance on the use of the Internet, "and indications are that the e-mail storage requirements may be made less burdensome." He added that instant messages "hope-

IM Regulations, page 16

GRIFFIN RESIGNS AS HOME DEPOT CIO

Oversaw enormous IT expansion at retailer

BY JAIKUMAR VIJAYAN

Ron Griffin is stepping down as CIO at The Home Depot Inc., just as the company is girding for a major overhaul of its core IT systems. Griffin will remain at the Atlanta-based home-improvement retailer for a few months, if needed, while a successor is found.

After 12 years of mostly 80-hour work-



RON GRIFFIN

weeks, with just 18 vacation days during that entire time, Griffin recently resigned from his position at the helm of Home Depot's IT organization, saying he wants to spend more time with his family.

"I'm a little burned" by the pace, Griffin said in an interview with *Computerworld*. "I've not struck a very good work/life balance. For the sake of my family and my own health and well-being, it's time for a change."

Griffin, who is in his *Griffin, page 16*

SPECIAL SECTION

EMERGING COMPANIES 2002

■ For a look at the technologies that fulfill IT's specific business needs, department by department, and to hear what customers have to say, turn to **PAGES 32-49**.

■ Execs at start-ups are under intense scrutiny from investors and customers. Read what they're doing to make both groups feel confident about their decisions. **PAGES 44, 54**

■ **Online Exclusive:** This year's Emerging Companies are making a run at the more established players in their market segments. For a look at how they're faring, visit www.computerworld.com/q?25138.



Penny Pinchers

Our Emerging Companies to Watch in 2002 know you've got to squeeze every ounce of value from your technology investments. That's always been one of your first priorities. And now that we're in an honest-to-goodness recession, it's at the top of every IT leader's list. The Emerging Companies that we've selected all offer tools and services that will help you bolster your business.

Special section begins on page 31.

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COMPUTERWORLD THIS WEEK

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6 Computer Associates tries to make its product lineup more comprehensible for users. Again.

7 Wall Street needs to settle once and for all on an XML standard, IT managers warn.

8 UCITA's friends and enemies vie to get the American Bar Association on their respective sides.

10 Oracle makes a pitch to lure Microsoft Exchange users to its Oracle9i database, but persuading them to rebuild their messaging platforms will be a tough sell.

12 2002 will likely be a record year for Internet security breaches, experts tell Congress.

14 Employees and the flawed access policies under which they work constitute the weakest link in IT security, experts say.

18 SAP promises to make it easier for users to run its software in mixed-vendor environments.

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ONLINE

Targeting the Right Customers

Paul Mandeville of Boston-based Xchange Inc. says companies need to fine-tune their efforts to get the most out of their customer relationship management initiatives. www.computerworld.com/ecommerce

Computerworld for Your PDA

Sign up for our free AvantGo channel to get the latest news delivered to your handheld device. www.computerworld.com/cwmobile

EMERGING COMPANIES 2002

Penny Pinchers

Looking for a fast return on your technology investments? Computerworld's 100 Emerging Companies to Watch in 2002 are the technology vendors we identified as the agile newcomers in their markets, staying close to their customers and winning business with innovative technology. You'll meet them in this special section through the experiences of their customers.

31 Editor's Note This year's call for Emerging Companies nominees revealed that despite a slow economy, there's plenty of room for innovation.



32 IT Goes on a Bargain Hunt Helping IT reduce costs and do more with fewer resources is a priority for this year's Emerging Companies. And with the nation at war and the economy in a true tailspin, they're enabling IT to show fast payback on those investments, say managers like Staples' Lisa Hamblet (above).

39 Untangling the Supply Chain Small companies are critical partners in large organizations' use of IT in operations and logistics. Determining whether these emerging companies have the responsiveness, management skills and financial wherewithal is as important as how cool their technologies are.

40 Sold on Innovation Whether they're putting wireless access into customers' hands or enabling complex sales processes, firms looking for a competitive advantage in their sales operations are reaping the benefits of leading-edge technology from emerging companies.

44 Connecting With Customers New technology vendors helped these companies reach out to customers by automating responses through multiple communication channels and providing product information and shipping status through a customer-facing Web site.

46 Bean Counting When Nike looked for a new data warehousing tool to generate financial reports, the company turned to a startup for just the right product.

48 Saving Money on the Desktop Using a subscription-based desktop service allowed one company to reduce operating expenses by 20% by eliminating its internal help desk and other support staff. But before teaming up, the company put the vendor through its paces.



52 All Eyes Upon Them Now more than ever, emerging technology companies are finding themselves under increased scrutiny from investors and customers. Here's how to answer their tough questions.

54 Who's Getting the Money? For IT buyers, the decline in equity investments spells good news:

Their current vendors will be held more accountable for generating real, ongoing revenue.

56 The list Here's this year's Emerging Companies to Watch and the methodology for choosing them.

60 Due Diligence Doing business with emerging companies is an opportunity — and a challenge — says columnist Frank Hayes. For those vendors to help IT survive, they'll have to become trustworthy partners. Here's how to build that trust.

ONLINE EXCLUSIVES

To learn more about what the Emerging Companies for 2002 offer IT and to find links to their Web sites, check out www.computerworld.com/q?1270.



ILLUSTRATIONS BY SERGE BLOCH

This year's Emerging Companies are making a run at the more established players in their market segments. For a look at the state of the market in each area and how the emerging players are carving out unique niches, visit www.computerworld.com/q?25138.

NEWS

AT DEADLINE

EC Sets Microsoft Antitrust Hearing

The European Commission announced plans to hold a two-day hearing next month as part of its antitrust-related investigation of Microsoft Corp. The commission will hear arguments from both sides in the case, which includes claims that Microsoft used illegal means to try to dominate the market for low-end server operating systems. The hearing is set for Dec. 20 and 21.

Legal Head Stepping Down at Microsoft

Microsoft said William Neukom, its general counsel, plans to resign when the company's fiscal year ends in June. Neukom has managed Microsoft's legal and government affairs for 22 years and has been an employee since 1985. Brad Smith, deputy general counsel for sales activities, will replace Neukom.

Hacker Gets Playboy Customer Data

Chicago-based Playboy Enterprises Inc. confirmed that a hacker broke into the online store on its Web site and sent e-mails to customers, complete with their credit card numbers and other personal information. A spokeswoman said Playboy.com hired a security consulting firm and took other unspecified steps to prevent further intrusions.

Walmart.com CEO to Leave After Holidays

Wal-Mart Stores Inc. said Jeanne Jackson will give up her job as CEO of its online operation after the holiday season. The announcement came four months after Bentonville, Ark.-based Wal-Mart bought full ownership of Walmart.com, which had been a separate company. John Fleming, Walmart.com's head of merchandising, will run the unit as chief operating officer.

CA Product Lines Get Second Overhaul

New changes reverse parts of July revamp

BY MARC L. SONGINI

FOR THE SECOND TIME in the past four months, Computer Associates International Inc. is reshuffling its sprawling 1,200-product software lineup in an effort to make it easier for users to get a handle on the various tools and applications the company sells.

Islandia, N.Y.-based CA this week plans to announce an expansion of its core product brands from four to six and detail enhancements to its Web portal software and Neugent's neural network products. As part of the move, CA will create three product groupings, undoing a catchall middleware category that was just put in place in July (see box).

Perhaps most significantly, CA will roll its Jasmine ii database and middleware technology into a new grouping of data management and application development tools. Its Web portal software, which has been part of the Jasmine line, will become part of a separate product group along with its business intelligence tools.

CA is positioning the latest changes as a further refinement and clarification of its product marketing strategy. A company spokeswoman said the move wasn't driven by lagging sales but by input from users and industry analysts. "CA is trying to show that we listen to our customers' needs," she said.

The latest realignment is reassuring to Susan Stevens, an IT data administrator at Wachovia Corp. in Charlotte, N.C., and president of the Charlotte Modeling Users Group, which is made up of companies that use CA's ERwin data modeling and BPwin business process modeling tools.

The modeling software will be split off from the Jasmine line and put into a new grouping of tools called AllFusion. Stevens said the plan gives her increased confidence that CA is committed to the continued development of ERwin and BPwin. That's especially important because CA "has had the reputation in the past of purchasing companies and letting their software tools kind of flounder," she said.

Given the breadth of products CA sells, analysis said, it isn't surprising that some users are baffled by parts of the lineup — particularly Jasmine, which CA has had to go to great lengths to explain.

"I think the Jasmine name had gone through so many cycles that it was proving to be a confusing brand," said Evan Quinn, an analyst at Hurwitz Group Inc. in Framingham, Mass. Overall, he said, the re-

branding should bring more clarity for users as well as CA's own employees, and it could help the company do a better job of focusing its research and development efforts.

Ben Ettlinger, lead data administrator at the Albany-based New York Power Authority, a state-run power generation agency that also uses the ERwin tool, said he wasn't confused by CA's previous product branding. But the revamping efforts "may represent a realization on their part of the need to make the [prod-

uct] catalog easier to navigate" for other users, he said.

Another CA user was less impressed. The planned changes "will not fix any of the real problems," said an administrator at a large school district in the southeastern U.S. that runs a number of CA's mainframe software products. A bigger concern is that the company's sales force "does not care about after-the-sale issues" at customer sites because of the way they're compensated, said the user, who asked not to be identified.

However, CA is trying to change its reputation of being a less-than-friendly business partner, and other users have given the company credit for improving its customer support [News, Sept. 24]. ▀

CA Tries Again

Under a new plan to be announced this week, CA will group its various products into the following six core families.

Existing product groups that will remain in place:

- Unicenter, for enterprise management tools
- eTrust, for security and antivirus software
- BrightStor, for storage management applications

New groups that are being set up now:

- Advantage, for data management and application development tools
- AllFusion, for application life cycle management
- CleverPath, for portal and business intelligence software

Compaq Bets on Leasing to Spur Growth

Expects increase, but still dwarfed by IBM

BY MATT HAMBLEN

Amid dismal technology market forecasts, at least one vendor, Compaq Computer Corp., expects big growth in its leasing of computers and related gear next year.

In fact, Compaq's leasing subsidiary, Compaq Financial Services Corp. in Murray Hill, N.J., expects to increase the amount of Compaq gear that it finances by 35% next year, CEO Irving Rothman said last week.

Rothman acknowledged that those projections are based on a relatively small number of

users, since Compaq entered the business only in 1997. The subsidiary said it expects to lease about 12% of all Compaq products sold to corporate users next year, up from about 8% this year.

Still, Compaq is well behind several other large computer makers in assets managed, according to an independent trade listing, the Monitor 100, which was released in June. That list puts Compaq's financed assets for last year at \$2.6 billion, well behind the \$29 billion in financed assets from IBM Global Financing and the \$6.8 billion from the leasing arm of Hewlett-Packard Co., Compaq's proposed merger partner.

"Compaq does a very nice job of leasing, but they are dwarfed in size by some others," said Frances O'Brien, an analyst at Gartner Inc. in Stamford, Conn.

She estimated that more than 70% of U.S. firms lease some type of computer equipment. Companies seeking to lease will face fewer choices because independent leasing companies are being squeezed out of business due to their inability to match the attractive financing deals of banks or computer makers, O'Brien said.

Rothman's operation — 850 workers in 42 countries — has not yet faced layoffs. But its future after the merger between Compaq and HP is uncertain. ▀

NEWS

Wall St. Pins Integration Hopes on Emerging XML Standards

Brokerages, banks aim to interconnect legacy apps amid mix of XML protocols

BY LUCAS MEARIAN
NEW YORK

Wall Street banks and brokerages are stumbling over one another to install their own versions of XML to interconnect internal legacy hardware and applications.

But IT managers at those firms say the potential for XML to become an open Web interface — one that allows financial services companies and their clients to share data — won't be fully realized until the industry settles on a single standard.

Most of the attendees at the XML on Wall Street conference here last week said they believe that standardization will emerge only if the securities industry and vendors agree to map their efforts around the International Standards Organization's XML data dictionary, which defines data descriptors.

"Having separate standards now will be talked about in the future as being as insane as each of us having our own forms of TCP/IP. As financial institutions, we have to do more to coordinate those standards," said Russ Goring, deputy CIO at Dresdner Kleinwort Wasserstein, the investment banking arm of London-based Dresdner Bank AG.

Dresdner Bank has an internal XML strategy. Overall, 42% of companies in the global financial services industry have such strategies in place, according to Jean-Francois Abramatic, chairman of the World Wide Web Consortium (W3C). Another 36% of companies in the industry have plans to implement XML as a middleware application.

"Systems integration and

sharing data are the most important reasons to use XML," said Abramatic, whose group is still working on XML Web services standards and protocols. "Vertical applications are the challenge of the day."

Emerging Interest

Others at the conference acknowledged that they knew little about XML but wanted to jump on the bandwagon.

Shari Ball, director of information services at American Capital Access Inc., a New York-based company that in-

sures municipal bonds, said her firm recently purchased 12 different news, exchange and calculation applications that should help its financial analysts weigh bond risks. Ball said she hopes XML will allow her to knit the applications together for a single view of the bond and credit information.

Eli Bayajian, American Capital's CIO, said he would also like to populate a newly created SQL database with XML data feeds.

XML lets American Capital's financial advisers and analysts generate bond rating reports from news, stock and bond service feeds such as those of Bloomberg LP and Moody's Investors Service.

"We spent a lot of money buying those services, so we need to make them work well," Ball said. "We need to deliver them as one type of desktop application so analysts can review all the companies' information to determine if we want to buy bonds from them."

Pan Gu, an application developer in the market risk division of New York-based J.P. Morgan & Co., said he's looking for tools that will allow him to tie together internal systems. Still, he's having a hard time convincing his manager that middleware is needed.

"How do you convince a manager to spend the money?" he said. "If you're building a stand-alone application that's

Making XML Work

For a single Web service standard to be successful, financial services firms must begin to define the scope of XML initiatives within their industry.

- Firms must identify liaisons, such as XML standards foundations.
- The firms must provide perennial quality-assurance tools
- They must check for architectural consistency.
- The W3C must complete its construction of an XML Web services and protocol standard.

not getting data from an external system, it's pretty hard to sell. The problem is that if you want to use XML, everyone [in the industry] has to be on board." ▶

Updated B2B Services Registry Debuts, But Adoption Among Users Remains Slow

UDDI still faces hurdles as questions about benefits of registration linger

BY MICHAEL MEEHAN

An updated beta-test version of the business-to-business services registry set up last spring by IBM and Microsoft Corp. was launched last week with support from two more technology vendors as well as improved data access and service listing capabilities.

But analysts and potential users said there are still technical snags that need to be overcome before companies are likely to adopt the Universal, Description, Discovery and Integration (UDDI) directory in a widespread fashion.

UDDI backers said the directory, which they envision as an e-business Yellow Pages, currently boasts more than 7,000 registrants. But Scott Cosby, IBM's Web services manager, acknowledged that about half of the registrants "really aren't sure how to link

their e-business infrastructure with others." That underscores the fundamental hurdle faced by UDDI: Companies have been slow to register with the directory, and many don't know what to do once they're registered.

The second version of the registry, which is based on a technical specification ap-

proved in June, is being hosted in beta form on separate Web sites set up by IBM, Microsoft, Hewlett-Packard Co. and SAP AG. By early next year, the companies said, they will be able to replicate registry data between the different UDDI Web sites.

The updated UDDI technology now also lets users set up private registries for Web services that are used within their companies or by business partners, and it includes more complex data querying and

business relationship modeling capabilities (see chart).

UDDI uses the Web Services Description Language to list the services and applications offered by companies; the XML-based Simple Object Access Protocol (SOAP) is the envelope that sends messages back and forth between the registry and users. But Kelly Babbit, senior vice president of advanced development at Lee's Summit, Mo.-based electronic-procurement services provider eScout LLC, said that when users customize SOAP headings, the envelopes don't integrate well with non-Microsoft operating systems.

"That's something we'd need fixed before we start making a major investment in Web services," Babbit said.

Ken Vollmer, an analyst at Giga Information Group Inc. in Cambridge, Mass., said UDDI's slow start is likely disappointing to those who expected an explosion in its use. "They've still got to work the bugs out," Vollmer said. "You've got lots of people putting bogus information in [the registry], and there isn't a whole lot of functionality yet." However, he added that the ongoing work should bear more fruit over the next few years. ▶

Upgraded UDDI

UDDI was designed to help companies locate suppliers and other potential business partners and then hook up with them via the Web. The following features have been added as part of the updated version:

- Two new browser-accessible sites, operated by Hewlett-Packard and SAP, for use in entering and accessing UDDI information.
- Programmer interfaces that let developers use more sophisticated and complex queries for finding data in UDDI registries.
- Improved capabilities for building models of business relationships and organizational structures into listings for viewing by other users.

Bar Association Hears Debate Over UCITA

ABA backing may determine law's passage

BY PATRICK THIBODEAU
WASHINGTON

IN AN UNUSUAL FORUM that ended last week, a special committee of the American Bar Association heard two and a half days of debate over the proposed software licensing law known as UCITA. The hearings were a step toward determining whether the group should back the controversial measure.

The ABA's position is seen as critical to the act's fate. If

the Chicago-based organization supports the Uniform Computer Information Transactions Act, "I believe we will see UCITA passing in many states," said Cem Kaner, an attorney and computer science professor at the Florida Institute of Technology in Melbourne. Kaner is a leading critic of the measure.

But if the ABA opposes UCITA, he said, "I would be astonished if the bill passed in any state."

The meeting was held by the

UCITA drafting committee of the National Conference of Commissioners on Uniform State Laws (NCCUSL) in Chicago in what is seen as a last-ditch effort to broaden support for the embattled law, as well as to gain ABA backing.

Opponents of the measure submitted approximately 80 pages of amendments at the meeting and were armed with a letter issued the previous week by 32 state attorneys general recommending that UCITA be scrapped.

The attorneys general said the law "appears to go much further than necessary to meet legitimate needs" and is so

flawed that any amendments to fix it "would not significantly ameliorate UCITA's negative impact on consumers or on the marketplace in general."

The attorneys general of the opposing states — including such technology-centric states as California, Colorado, Massachusetts and New York — said UCITA's electronic-licensing concerns can be addressed through existing laws.

While the number of attorneys general opposing UCITA has increased from 26 two years ago to 32, that opposition hasn't stopped the NCCUSL and UCITA's supporters from pressing forward with the law and winning adoption in Virginia and Maryland. UCITA's supporters include Microsoft Corp. and Dulles, Va.-based America Online Inc.

In addition to the threat of ABA opposition, what has slowed proponents and ultimately prompted last week's meeting has been the political success of opponents in either stalling or blocking UCITA in the eight states in which it was introduced this year.

UCITA provides a framework for licensing contracts when there's no specific provision in the contracts. Opponents say UCITA's default provisions grant several questionable rights, such as prohibiting reverse-engineering.

A Call for Compromise

The NCCUSL drafting committee will attempt to make its recommendations in the next several weeks, said Carlyle "Connie" Ring Jr., the committee's chairman. Amendments are expected, but Ring would not predict the extent of the changes. He added, however, that the drafting process "requires people to make compromises" and that "there have to be accommodations between different points of view."

The drafting committee is expected to make some changes to UCITA. One possibility is the removal of the so-called self-help provision that allows a vendor to remotely shut down software if it believes the license has been violated. That move is being recommended

At a Crossroads

UCITA is facing some major hurdles.

States: Thirty-two state attorneys general this month said UCITA is beyond repair and want it scrapped. Opponents include the technology-centric states of California and New York.

American Bar Association: A special ABA committee has begun examining UCITA to determine whether the association should support it. If the ABA backs it, that will help UCITA win passage. ABA opposition could kill it. There's no timeline for a decision.

What's next: Backers will renew their push next year to win state adoption of UCITA. A key state to watch is Washington, home to Microsoft, a major supporter of UCITA.

by proponents who would rather not see any changes to the law but who are nonetheless willing to give up support of that provision.

Opponents, however, want UCITA to ban self-help and said they worry that vendors will still attempt to implement self-help measures under existing laws. But they're skeptical that UCITA's drafting committee will ban the provision.

"It would be courageous but unlikely for NCCUSL to make radical changes to the draft," said Lars Kristiansen, director of legislative affairs at Nationwide Insurance Cos. in Columbus, Ohio.

Opponents are also concerned that the drafting committee could weaken the coalition of end users and library and consumer groups opposing the law if it recommends changes that satisfy some groups but not others.

The ABA committee will issue its recommendations after the NCCUSL committee completes its work. The ABA recommendations could "range from supporting UCITA as drafted [to] opposing UCITA," said John Vittone, chief judge for the Office of Administrative Law Judges at the U.S. Department of Labor. ▀

FOR

COST ISSUES. Vendor officials such as Lorin Brennan, one of the founders of Gray Matter LLC in Newport Beach, Calif., which makes software used in motion picture licensing, said UCITA will reduce transaction and negotiation costs for his small business.



Robert Hahn at The Brookings Institution in Washington argued in a paper that UCITA would lower transaction costs for consumers and said that any potential burdens "appear to be minimal." The paper was released earlier this month by UCITA's supporters.

DISCLOSURE OF BUGS. Proponents want UCITA to pass as is without a provision to force vendors to disclose flaws in

their software. Such forced technical disclosures could alert terrorists, for instance, to potential weaknesses in software, as well as provide a disincentive to vendors to thoroughly test software before release, said Robert B. Mitchell a partner at Seattle-based Preston, Gates & Ellis LLP.

"No vendor in their right mind would ship software that's not going to function as it's been advertised," Mitchell said. "But is the software perfect? No."

AGAINST

REMOTE SHUTDOWN. Lynn Johnson, industry affairs manager at Chicago-based The Boeing Co., spoke against the so-called self-help provision that allows a vendor to remotely shut down software if it believes the license has been violated. Johnson warned of accidental or malicious use of the remote shut-off mechanism.

"Electronic self-help measures are themselves inherently unreliable and are known to misfire and to be misused," said Johnson. "The danger from hackers should not be overlooked; there is too much at stake ... to allow such mistakes to occur."



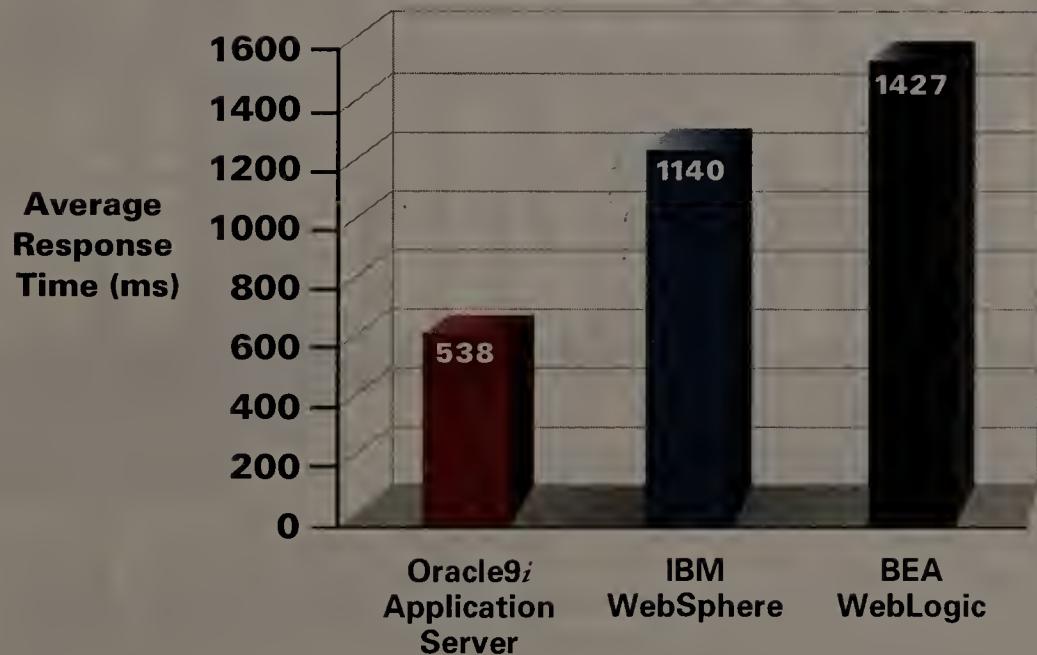
COST ISSUES. Large companies say UCITA will increase technology costs. Bruce Barnes, a former top technology official at Nationwide Insurance, estimated that UCITA would add \$20 million in costs to an IT budget of approximately \$900 million. Security problems created by UCITA account for about half the added cost, he said. Limits on software license transferability are another factor, said Barnes, who is a private consultant in Dublin, Ohio.

DISCLOSURE OF BUGS. Opponents are upset that UCITA currently doesn't require vendors to disclose bugs. Fred von Lohmann, senior intellectual property attorney at the Electronic Freedom Founda-

tion in San Francisco, argued that disclosure improves security. Citing the wide use of Apache open-source software by the private sector, he argued that "the notion that openness hurts security is belied by reality."

REVERSE-ENGINEERING. Not all software vendors are supporting the legislation. Sun Microsystems Inc. opposes UCITA, and Lowell Sachs, the company's federal governmental affairs manager, spoke against provisions in UCITA that ban reverse-engineering. "It's crucial for a number of reasons," said Sachs. "It's important to help strengthen networks, it fosters innovation, [and] it helps to ensure competition within the industry."

ORACLE runs Java Faster



Oracle runs Java applications
in half the time of IBM or BEA.
Source: Industry standard benchmark

ORACLE®

Relative performance of Oracle9i Application Server 1.0.2.2,
IBM WebSphere 4.0 and BEA WebLogic 6.1 on identical hardware.

oracle.com/java

BRIEFS**Microsoft Signs Deal To Settle Private Suits**

Microsoft Corp. agreed to settle more than 100 class-action lawsuits alleging that the company overcharged users for its desktop software. If the deal is approved by a federal judge in Maryland, Microsoft will donate \$1 billion worth of software, PCs and funding to 12,500 U.S. schools during the next five years.

Microsoft plans to take a \$550 million pretax charge in the current quarter as a result.

United Technologies, CSC Extend Pact

United Technologies Corp. in Hartford, Conn., added five more years to an IT outsourcing deal signed two years ago with Computer Sciences Corp. (CSC), extending the contract through 2014. The extension increases the projected value of the agreement with El Segundo, Calif.-based CSC by \$1.1 billion, to a total of \$3.7 billion.

FTC Warns E-Retailers About Shipments

The Federal Trade Commission (FTC) warned 72 online retailers to comply with federal regulations on timely product shipments after examining their Web sites. The FTC, which didn't identify the targeted companies, said it looked at 110 sites before issuing the warnings.

Compaq, Health Care System Ink \$40M Deal

Dublin, Ohio-based Cardinal Health Inc. signed a two-year contract, valued at about \$40 million, to buy servers, PCs and other products from Compaq Computer Corp. Compaq said Cardinal Health will make its purchases under the contract through an online marketplace operated by Pleasanton, Calif.-based Commerce One Inc.

Oracle Sets Its Sights On Exchange Users

Analysts doubtful it will unseat Microsoft

BY JENNIFER DISABATINO

ORACLE CORP. has announced a migration service to lure users of Microsoft Corp.'s Exchange e-mail server to the Oracle9i database. But it's difficult to find anyone other than Oracle who expects the initiative to make a dent in Exchange's armor.

Oracle has offered an e-mail server product for several years but is only now aggressively targeting its chief rival, Microsoft, for a foothold in the messaging market.

Oracle Chairman and CEO Larry Ellison said he's not looking to unseat the Outlook client, but rather the Exchange e-mail database on the back end.

"[Users] need the security, reliability and much lower cost," said Scott Clawson, the director of Oracle9i product marketing. "[E-mail] is the one thing that was the highest [in] demand from our customers."

Apples to Oranges

At Comdex/Fall 2001 in Las Vegas two weeks ago, Ellison spoke about the new service and acknowledged that Microsoft Exchange Server is priced far lower than Oracle's database. But he argued that large companies need 25 or even 50 servers with the Microsoft software to handle the same amount of traffic as Oracle9i.

"I'd say you need at least 10 Exchange Servers to do this, or you're too small to bother," said Ellison.

Chris Baker, Microsoft's lead product manager for Exchange, said Microsoft's product can handle 10,000 users on a server in an application service provider model. He also pointed out that many of Outlook's col-

laborative functions, like calendaring, don't work without Exchange on the back end.

Oracle has some Web-based tools, like calendaring, but "you might lose some functionality there," acknowledged Clawson.

The two dominant players in the corporate messaging market are Microsoft and IBM subsidiary Lotus Software Group.

"I really treat everything Larry Ellison says with a bit of skepticism," said David Druker, an analyst at Ferris Research Inc. in San Francisco. Druker said it's unlikely that

many users will be willing to rip out their back-end e-mail systems in favor of Oracle. Lotus users especially look to the Notes/Domino messaging platform combination for collaborative database applications beyond e-mail, he said.

There isn't a compelling reason for most companies to switch, Druker said, unless they're already heavy Oracle database users and have the requisite database administrators in place.

"Oracle has had a mail offering for four or five years. It's interesting that they would [push

AT A GLANCE**Casting The Bait**

Oracle's 9i migration program includes the following services:

E-mail migration assessment: A method companies can use to assess the economic benefits of moving their e-mail infrastructures to Oracle

E-mail migration accelerator: A set of tools and best practices for migration from Microsoft Exchange to Oracle9i

migration] now when the market has solidified around two products," said Ed Brill, director of infrastructure marketing, messaging and collaboration products at Lotus. He said Lotus is happy to let Microsoft and Oracle "fight it out."

Clawson said Oracle plans to ship a 9i plug-in for Notes and Domino in the near future. ▀

HP Cuts Superdome Prices

Price war with IBM, Sun possible

BY JENNIFER DISABATINO

Hewlett-Packard Co. last week announced that it has reduced the prices of its high-end Unix server by as much as 30%. The move was spurred by a drop in memory component prices and pressure from IBM's p690 system, formerly code-named Regatta.

With the 30% price reduction, the average price for a 32-way HP Superdome system is

\$600,000 to \$700,000, the company said. The server also can be configured with 16 or 64 processors.

Gordon Haff, an analyst at Illuminata Inc. in Nashua, N.H., said HP dropped prices "to make it harder for IBM with the p690." Moreover, HP's cost to manufacture the Unix servers has dropped because "memory and other component prices dropped," he added.

Mark Hudson, worldwide marketing manager for HP's Unix servers, acknowledged that IBM's release last month of the p690 high-end Unix server was one of the two motivating factors for the drop in the Superdome pricing. IBM is selling the p690 to compete with rival Sun Microsystems Inc.'s Sun Fire 15K server, code-named Starcat. The other factor, he said, was the drop in the price of components.

Hudson added that both IBM and HP are dropping prices to go after Sun's market share. Sun has been regarded as the leader in the market for servers that run the Unix operating system, according to analysts.

Sun will have to cut prices,

said Rich Partridge, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y.

While the pricing was probably announced as a headline-grabber, Partridge said, the performance numbers that came out at the same time are "reasonably significant."

HP announced that it had a Transaction Processing Council TPC-C benchmark result of 389,434 transactions per minute on the 64-way PA-8700 Superdome running an Oracle Corp. 9i database.

"Indeed, this was an achievement for HP to prove that they have the scalability to a 64-way system," Partridge said.

Potential Merger Moves

Haff said HP's Superdome price cuts and its recent announcement that it will discontinue the e3000 server line are part of a general trend among technology companies to focus on their biggest profit centers and aren't directly motivated by plans to merge with Compaq Computer Co. But there could be implications, he said.

"[If] the merger does go through, both HP and Compaq will look hard at their product lines, and some trimming will take place," Haff said. ▀

AT A GLANCE

Inside HP's Superdome

- 16, 32 or 64 processors per node; 750-MHz, four-way superscalar PA-8700 CPUs with 2.25MB on-chip cache per CPU
- Partitioning capability for hardware, combined with complete software isolation, allows multiple operating environments
- Up to 128GB memory per cabinet (512MB dual in-line memory modules)
- Peak 16GB/sec. memory controller bandwidth; 64GB/sec. per 64-way cabinet

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More hospitals around the world are running their "life-or-death" applications on Caché than on any other database system. With proven reliability like this, you should consider Caché for your critical applications.

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Record-Breaking Year for Security Incidents Expected

Experts criticize 'reactive' nature of responses, tell Congress to lead charge

BY DAN VERTON
WASHINGTON

THE GOVERNMENT and the private sector need to prepare for what will likely be a record-setting year ahead for Internet security incidents, a panel of industry experts recently told Congress.

The CERT Coordination Center at Carnegie Mellon University in Pittsburgh estimates that the number of security incidents reported this year will surpass 40,000 — more than twice the number of incidents reported last year. And not only is that number likely to increase next year, but such incidents also have the potential to bloom into serious threats similar to the Code Red or Nimda worms, which damaged hundreds of thousands of systems and cost companies more than \$1 billion.

"The threat is critical," said

Dave McCurdy, executive director of the Arlington, Va.-based Internet Security Alliance, speaking at a Nov. 15 House subcommittee hearing on cybersecurity.

McCurdy told the committee that because 80% of the major security vulnerabilities are common to all organizations, the past four significant Internet worm attacks have cost companies more than \$10 billion in repairs and lost productivity (see chart).

McCurdy also criticized the "reactive" nature of the re-

sponses to security threats and said a more proactive approach is desperately needed.

Mark Doll, a security analyst at Ernst & Young LLP in San Jose, agreed that more should be done to encourage companies, individuals and the government to take action on improving security. "Most companies lack the necessary rigor and scale of recovery systems to respond to a national attack or a cohesive cyberterrorism threat," said Doll.

In fact, a CIO magazine survey of 150 CIOs found that 40% of companies still don't have cybersecurity experts on staff or under contract.

Warren Axelrod, director of Global Information Security at

the Pershing Division of Jersey City, N.J.-based Donaldson, Lufkin and Jenrette Securities Corp., put the onus on Congress, urging lawmakers to subsidize the creation of separate, secure intranets for the government; provide funding for a permanent Information Coordination Center similar to the one established for the year 2000 problem; and pass legislation exempting sensitive corporate information that's shared with the government from disclosure under the Freedom of Information Act.

"I recognize that I am proposing a costly series of programs at a time when budgets are tight," said Axelrod. "It will be a long and bitter battle,

but we must engage in it if we are to prevail."

The government, however, tends to view private-sector participation in terms of sectors or "stovepipes," which creates barriers to true information sharing, McCurdy said.

Mary Ann Davidson, director of security product management at Oracle Corp., turned the spotlight on IT users and consumers. "They must make security a purchasing criterion," she said. "If you do not make it a purchasing criterion, you lose the right to complain afterwards if you've been hacked."

Likewise, vendors need to join an industry information-sharing organization, Davidson said, adding, "Either we hang together or we all hang separately." ▀

Quick Link

To learn more about security, visit our Security Knowledge Center online:

www.computerworld.com/q?k1600

New Oracle Center to Tackle Security, Homeland Defense

BY DAN VERTON
WASHINGTON

Oracle Corp. is building an Information Assurance Center at its offices in Reston, Va., and has hired a veteran CIA officer to lead it. Company executives said the aim is for the center to eventually become a security research and development lab for the IT industry as a whole.

Oracle plans to complete by year's end construction of the facility that will house the center. The company is currently in discussions with government agencies, universities and major systems integrators to establish a cooperative research and development relationship that Oracle customers can tap into for assistance with enterprise security.

The center will serve as a one-stop shop for expertise on incident prevention, detection and crisis management, and will provide a test bed for new

approaches to security, business continuity and disaster recovery, officials said.

The plan is to eventually extend the reach of the center beyond Oracle's customer base and make it a security research laboratory that will "advance the state of the art in information security," said Tim Hoechst, senior vice president of technology at Oracle Service Industries.

"My hope is that this becomes more of an industry security center rather than an Oracle technology center and that it expands to all aspects of security — from physical security to database security, and everything in between," said Hoechst.

Oracle, whose name was derived from a 1979 CIA development project, has hired David Carey, a 34-year veteran of the CIA and the agency's former executive director, to head the

new center. Carey is credited with playing a major role in revitalizing the agency's clandestine and analysis capabilities. He also expanded the CIO role at the CIA from simply a technology manager to the agency's IT service provider.

As executive director, "you do everything from strategic planning to emptying the waste baskets," said Carey, who was about to be reassigned overseas when he decided it was time for a challenge in the private sector. Carey entered discussions with Oracle last spring and officially joined the company Sept. 4.

New Trend

The announcement of Oracle's new center came on the heels of IBM's formation of IBM Global Security Services. Analysts view both moves as a post-Sept. 11 push by vendors to take advantage of the burgeoning government security market.

It's a trend that's moving in the right direction, said James

Governor, an analyst at Illuminata Inc. in Nashua, N.H. "This kind of cross-organization coordination will become increasingly important," said Governor. "A distributed world requires distributed approaches to security."

"It's voracity, elevated by the recent congressional allocation and by wartime consumption,

[that] makes government the right market for vendors to target right now," said Phil Russom, an independent analyst in Waltham, Mass.

Oracle CEO Larry Ellison has been touting his company's security expertise. Only

weeks after he pledged to give the government free software for a national identification card, Ellison challenged the hacker community during the recent Comdex conference in Las Vegas to break into the Oracle9i database, which, he said, is "unbreakable." Ellison also emphasized 14 security certifications that Oracle has received from the federal government. ▀

The Cost of Cyberattacks

► **SirCam**
2.3 million computers affected
Cleanup: \$460 million
Lost productivity: \$757 million

► **Code Red**
1 million computers affected
Cleanup: \$1.1 billion
Lost productivity: \$1.5 billion

► **Love Bug**
50 variants; 40 million computers affected
Cleanup and lost productivity: \$8.7 billion

► **Nimda**
Cost still to be determined

Software quality 80%

Developer productivity 300%

ROI 1400%

Testing time 95%

Development cycle 66%

Lump in throat 100%



Lies, damn lies and statistics, you say? Some of our customers used to be cynical, too. Before they were customers. But then they started sending us these numbers. Telling us that the results of using our best practices, integrated tools and services exceeded their expectations. Cutting test time, decreasing development cycles and reducing bugs. Freeing their teams from the obstacles that hinder software development. Need more evidence? There's plenty available at www.rational.com/customersuccess2.

be liberated

Delta Aims CRM Tool at Holiday Travelers

Flight-tracking app took just six weeks

BY JENNIFER DISABATINO

Just in time for holiday travel, Delta Air Lines Inc. last week cooked up a new customer service feature on its Web site using existing technology and programming resources.

Delta passengers can now track airport wait times at Delta.com through their itinerary views or in the flight schedule and information sections of the Web site, according to Kevin Donovan, manager of e-commerce at the Atlanta-based air carrier.

The new customer relationship management (CRM) tool tracks estimated peak and off-peak wait times at curbside check-in, ticket counters and security checkpoints at about 115 airports in the U.S. and several Caribbean countries.

While the sluggish economy and ongoing security concerns have quashed many IT projects in the airline industry, this one was conceived and approved after the Sept. 11 terror-

ist attacks because of the need for improved airport security procedures, Donovan said.

"I think the circumstances that we're facing now create the need for it," he said. Because of the longer wait times at airports, passengers need a way to calculate how much

time to allow for longer lines and extra security, he said.

That need meant that not only was the new tracking feature at Delta.com approved, but its implementation was actually expedited, Donovan said. "This was a fast-track project" that took only about six weeks to de-

sign, test and launch, he said.

While Donovan couldn't give details on the cost of the CRM project, he said it involved no new technology purchases — just time and overtime pay for the IT staff.

Delta's IT unit built forms into the airline's e-mail client, Microsoft Corp.'s Outlook, which collects wait-time information. WebLogic application server software from San Jose-

based BEA Systems Inc. is used to post the data to the site.

"It's pretty basic. There's nothing too fascinating about the technology here," Donovan said. "We have e-mail access for our [airports]. We created a form in e-mail [to enter the wait-time information]. There was some development to ensure security." A separate access point was created for each airport, Donovan added. ▀

Security Experts: Users Are the Weakest Link

Insiders main threat to corporate networks

BY DAN VERTON

COMPANIES THAT would have trouble if asked to compile a list of their networks' users and detail the level of access those users have are sitting ducks for cybersabotage, a group of industry experts said last week.

Weak user passwords, incon-

sistent policy enforcement and lackadaisical user-access management have made corporate network users the No. 1 cyber-threat to sensitive business data, said experts during a webcast sponsored by Irvine, Calif.-based Access360, a company that specializes in resource provisioning management.

"The user, while juggling even more IDs and passwords in today's environment, continues to be the weakest link," said Mark Ford, an analyst at the Secure eBusiness Group at New York-based Deloitte & Touche LLP. "We must gain control of the weakest link before we end up in an identity crisis."

For example, dormant user accounts and accounts belonging to users who are no longer employed by a company are "the classic problem for cybersabotage," said Brian Anderson, chief marketing officer at Access360.

Familiar Threat

The growing problem of insider threats is no secret to most IT managers. In fact, in a recent survey on cybercrime that was conducted by the FBI and the San Francisco-based Computer Security Institute, 81% of corporate respondents said the most likely source of

attack was from within a company. In addition, the U.S. Treasury Department said insiders committed 60% of the computer intrusions reported by banks and other financial institutions in the first four months of this year.

Ford recommends that companies return to the centralized security concepts employed in mainframe environments, including role-based

access control for all users. The automated tools that exist today to do this for companies will improve security and also offer a substantial return on investment, said Ford.

Identity management offers cost containment and revenue enhancements by increasing the number of customers and business partners that companies are able to support, Ford said. It can also accelerate time to market and decrease the cost of user and network administration.

In fact, one company Ford consults at reduced its administration costs by \$75,000 per month by automating user identity management, he said. ▀

A Misallocation of Funds?

According to Mike Hager, vice president of network security and disaster recovery at Oppenheimer Funds Inc. in New York, corporations are facing a key problem: They have spent about 80% of their security dollars to protect against outside threats when in fact 80% of all attacks come from the inside.

The misdirection of resources has led to misperceptions about cyberthreats among senior executives, said Hager. "If we don't educate senior management about what the real threats are, we don't get support from them," he said. "That's the No. 1 threat."

Hager said he found out firsthand how easy it is for insider access to be abused. During a recent audit of his own enterprise, he managed to crack 800 user passwords in three minutes using a standard tool. Within 36 hours, he was able to crack all 27,000 passwords being used through-

out the organization.

The ability to crack weak user passwords is particularly important because the answer to the question "Will a hacker be able to get into the network?" will always be yes, said Hager. He recommended that companies focus on enterprise security using an approach that responds to the following questions: Can attackers get in? Where can they go once they get in? And what damage can the attackers do?

In the short term, companies should work to get senior managers to realize the value of corporate data, said Hager, who was on the 32nd floor of Tower 2 of the World Trade Center when the first tower collapsed after the terrorist attacks on Sept. 11. "After having everything in our corporate headquarters totally lost, you [realize] real quick how valuable it is," he said.

-Dan Verton

New Wireless LAN Standard Receives IEEE Approval

BY BOB BREWIN

The Institute of Electrical and Electronics Engineers Inc. (IEEE) has approved a standard called 802.11g for wireless LANs operating in the 2.4-GHz band. The move could boost speeds of existing, widely installed wireless LANs from 11M bit/sec. to as much as 54M bit/sec.

Matthew Shoemake, chairman of the IEEE high data rate study group and manager of research and development for the wireless networking business unit at Dallas-based Texas Instruments Inc., called 802.11g the next critical step in ensuring "quick adoption of a

higher data-rate standard."

Alan Reiter, an analyst at Wireless Internet & Mobile Computing in Chevy Chase, Md., said users trying to determine which wireless standard to use should keep in mind that they could encounter interference in the 2.4-GHz band. That band is used by Bluetooth short-range wireless devices as well as products based on 802.11b and 802.11g.

The proliferation of wireless standards should mean price breaks for products operating under the 802.11b standard, which has attained economies of scale, Reiter said. ▀



If you ask IBM, e-business is complicated and hard. So don't ask them.

With fourteen operating systems, multiple chip architectures and a tangle of middleware to deal with, it's no wonder only IBM can "integrate" their systems. And with their closed, complex systems, they control it all. Which means you'll pay—and pay—for their monopoly on service.

On the other hand, Sun takes out complexity. Sun systems run on one chip architecture and a single operating environment, so you can scale from under-\$1,000 desktop systems to over-\$10-million data center systems without breaking a sweat, something you won't find at IBM. So if you want to lower your TCO (and who doesn't?), Sun lets you run the same applications, the same middleware (directory, portal, app server, etc.) and the same administrative framework across your entire IT environment. Which means you can use a single set of tools to develop all your applications. So there's no recoding, no retraining and no expensive consultants to come in and "manage" it all for you. You can even share the same system components between your midrange and data center-class systems. That's how you reduce complexity and bring down the cost of running your business. Big time.

IBM has it all wrong: e-business doesn't have to be complicated or hard. You just need the technology and partners that all speak the same language: yours.

take It to the nth  **Sun**
microsystems

BRIEFS**Media Player Has Flaw, Microsoft Says**

Microsoft Corp. has warned that a buffer overflow vulnerability in its Windows Media Player software could let malicious attackers launch code on some PCs. The flaw affects only Media Player 6.4 and can be exploited only if users open a particular kind of file. But a patch issued by Microsoft also plugs separate holes in other Media Player releases, and the company urged that users install it immediately.

Tibco Releases EAI Tools for Mainframes

Tibco Software Inc., a Palo Alto, Calif.-based developer of enterprise application integration software, announced new tools that support data on IBM mainframes. Tibco is offering application messaging links to IBM's z/OS and OS/390 operating systems, plus file transfer and database integration tools and software that lets non-mainframe applications request mainframe data.

IT, Other Capital Spending on Hold

IT is among the spending categories that many large companies are either keeping flat or cutting back after the Sept. 11 terrorist attacks, according to a survey by PriceWaterhouseCoopers in New York. Just 38% of 157 chief financial officers and other top executives reported plans for new capital investments at the end of the third quarter, a drop of four percentage points from a survey three months earlier.

Short Takes

DELL COMPUTER CORP. has announced a dual-processor Windows and Linux server based on the Pentium III, with prices starting at \$1,400. . . . San Mateo, Calif.-based **SIEBEL SYSTEMS INC.** has shipped a new release of its customer relationship management software.

Continued from page 1

IM Regulations

fully will be excluded entirely from the rule requirements."

But Thomas Weisel Partners LLC isn't waiting for the SEC's decision. The San Francisco-based merchant bank has blocked its employees from using America Online Inc.'s AOL Instant Messenger, Microsoft Corp.'s MSN Messenger and Yahoo Inc.'s Yahoo Messenger, the three most popular IM services on the market.

Pamela Housley, compliance manager at Thomas Weisel, said that the bank is installing IM technology from FaceTime Communications Inc. in Foster City, Calif., so that it can track message traffic internally. It's also considering IM tracking software from SRA International Inc. in Fairfax, Va., and Zantaz Inc. in Pleasanton, Calif., she said.

"Sure, it's a concern," Housley said in reference to the regulatory issue. "Instant messaging is an integral part of doing business. We're just trying to stay ahead of the curve." Housley added that she doesn't expect a softening of the regulations regarding IM traffic.

SEC officials didn't return calls by deadline seeking comment on the agency's position regarding IM.

Taking Next Step With Care

NASD is also considering the issue but hasn't decided how to proceed. "The question on the table is how the NASD is going to move forward on the matter," said association spokesman Tom Holloman. "We really aren't ready to go out publicly with how we stand on this yet."

The existing regulatory requirements place banks and brokerages in a tough spot, particularly as overall IM traffic continues to grow.

According to a study released last week by New York-based Jupiter Media Metrix Inc., use of IM for business purposes was up 110% in the U.S. during September, growing to 4.9 billion minutes from

2.3 billion minutes in the same month last year.

Should the SEC and NASD decide to stick with their current regulations, IM could become as cumbersome an issue as e-mail is today for financial services companies. Many securities firms have opted to save all e-mail traffic on WORM technology because of SEC rules that are written to protect consumers from being fed misleading or illegal information by their advisors.

WORM, an acronym for write once, read many, is an optical storage technology that allows users to write data onto a disk just once. After that, the data is permanent and can be read any number of times.

"The SEC has been pretty strict about monitoring conversations between investment counselors and their clients," said Larry Tabb, an analyst at Needham, Mass.-based TowerGroup.

Tabb said most financial services firms are complying with the SEC rules by shutting

Getting Dinged

Under NASD Rule 2210 and 3010 and SEC Rule 17a, instant messages are communications with the public and, therefore, must be monitored and recorded. Other facts about IM:

- IDC reported that IM use will jump to 400 million users worldwide by 2004.
- Approximately 40% of U.S. households will become active users of Internet financial services in the foreseeable future, according to a recent report by Meridien Research Inc.
- Meridien's report also showed that the use of electronic, text-based service requests via such means as e-mail and Web-forms is a significant and growing customer-service feature for financial service institutions.
- General electronic message use by financial services companies is expected to grow to more than 30 million messages per year by 2005.
- Spending on message-management systems this year will be about \$39 million and is expected to grow to \$158 million in the next five years.

down IM traffic, since there aren't a lot of robust software applications available that can track and store the messages.

Kirk Oberliesen, director of institutional trading services at Blackwood Securities LLC in New York, said IM can be a great tool for communications among broker/dealers. "I use

Yahoo IM and communicate to all my remote offices," he said. "Being required to track and store every message would be a huge burden." ▀

Quick Link

For more information on this topic, visit our Web site:
www.computerworld.com/q?23869

Continued from page 1

Griffin

late 40s, joined Home Depot when it was a \$2 billion company with 35 people in its IT organization. He's leaving a \$50 billion behemoth with an IT organization of nearly 1,300 people and a greatly changed technology environment.

During that time, almost every core IT system at Home Depot has been replaced or rebuilt from the ground up, including financial, order processing, supply chain, inventory management and human resources applications. Home Depot stores that once averaged 25 to 30 IT devices, such as scan guns and point-of-sale systems, today routinely have more than 500 such devices feeding the company's databases. And in three of the past four years, Home Depot has ranked No. 1 in *Computerworld*'s listings of the 100 Best Places to Work in IT.

"From a technology per-

spective, things have gotten more complex by an order of magnitude," said Griffin.

The challenge increasingly is to ensure that Home Depot's IT infrastructure is scalable enough in years ahead to keep pace with enormous growth in transactions, Griffin said. "Understanding the implications of how to build something that is of industrial strength to [deal with this growth] is a real challenge," he said.

Griffin is leaving at a time when Home Depot is planning another major rebuild of several core systems, including its supply chain and inventory management systems. The system upgrades were supposed to occur earlier but didn't get the necessary funding.

"It's been pretty frustrating," Griffin said. "There has been this incredible expense pressure from an IT standpoint."

A growing emphasis on getting a "return on every nickel you spend on IT" has meant that only those projects that show top-line business benefits get funding in the current

economic climate, he said.

Another challenge for CIOs is the need to manage expectations, Griffin said.

"If you get everyone to work incredibly hard and produce an awfully large amount of work and get major things done on time, then you are expected to do the same thing for even less next year," Griffin said. "Sometimes you tend to become a victim of your own success."

Senior IT executives are under growing pressure to do more with less, said Jamie McCleary, an analyst at People3 Inc., a human resources consultancy and a subsidiary of Stamford, Conn.-based IT consultancy Gartner Inc.

"Something has to give" in these kinds of situations, McCleary said. A testament to this pressure is the fact that most CIOs average just 15 months on the job, according to People3's studies.

Griffin plans to take the next few months off and, among other things, teach his 16-year-old daughter to drive. ▀



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Conferencing Services for **GTECH**, a global IT company servicing the lottery industry. Now its 4,600 employees can send messages or data, access key documents, or share applications from any location in 43 different nations. Result: GTECH makes decisions faster, and jumps on opportunities in real time.

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SAP Integration Plan Aims To Open Up Applications

New Java-based technology ties R/3 apps to other systems

BY MARC L. SONGINI
LOS ANGELES

ENTERPRISE RESOURCE planning (ERP) vendor SAP AG this month announced product enhancements designed to make it easier for users to extend SAP business applications across systems running a multivendor mix of software.

Central to the rollout, made at the SAP TechEd '01 conference here, is a Web application server that includes a Java software stack and is compliant with Sun Microsystems Inc.'s Java 2 Enterprise Edition technology. SAP said the new software will let corporate developers tie their ERP systems to Web applications while preserving coding work they have done previously in its proprietary programming language.

The company also claimed that the

Collaborative SAP

SAP has detailed a number of enhancements to improve collaboration between its software and other applications. They include the following:

- ▶ A new Web server that supports Java as well as SAP's own Advanced Business Application Programming language.
- ▶ Enhancements to open up its Business Information Warehouse data warehousing application to non-SAP data.

application server package and other elements of its mySAP Technology infrastructure pave the way for users to dynamically write business process rules and share them within their own companies, as well as with suppliers, distributors and customers.

However, some SAP-savvy IT departments will have to make investments in Java training before they can take advantage of the new tools, said Donald Duncan, a senior information systems analyst at the California Department of

Water Resources in Sacramento.

The water resources department runs the R/3 finance and human resources modules. SAP's new integration architecture could help California's state government link its various legacy systems and let agencies rapidly share data via the Web, Duncan said. But learning to use R/3 "is not a trivial undertaking" for end users who aren't familiar with the software, he added.

A developer at a large university in New England, who asked to remain anonymous, said he suspects that the full benefits of SAP's integration scheme won't be available to users for another two to three releases of the technology. But other users were enthused by SAP's move.

"We're looking for ease of use and to have one front-end [user interface]," said Dawn Genian, director of information systems at audio systems maker Harman International Industries Inc. in Northridge, Calif. One challenge with R/3 is making the graphical user interface easy enough for executives to use, Genian said, adding that the Java support should help address that problem. ▀

IBM Continues Linux Push With New Preconfigured Server Clusters

Hardware, software bundled together to speed setups

BY TODD R. WEISS

IBM this month underscored its \$1 billion commitment to Linux technology by announcing a set of preassembled server clusters that support the open-source operating system.

The new Linux eServer Cluster 1300 line also includes bundled applications and server-level software plus integration testing and technical support services, IBM said. The clusters, which are scheduled to start shipping today, can be set up with a minimum of four Intel-based servers and a maximum of more than 1,000.

The National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign

began a Linux cluster project earlier this year. If IBM's preconfigured clusters had been available then, the NCSA would have carefully considered them because they could have simplified a very complex project, said Rob Pennington, associate director of computing and data management at the center.

IBM said the new clusters run Version 7.1 of Research Triangle Park, N.C.-based Red Hat Inc.'s Linux and include centralized cluster management tools and global file system software derived from IBM's Unix-based SP supercomputer. Pricing for a cluster of eight Pentium III-based servers and a separate management server node starts at about \$85,000.

AT A GLANCE

Easier Clusters

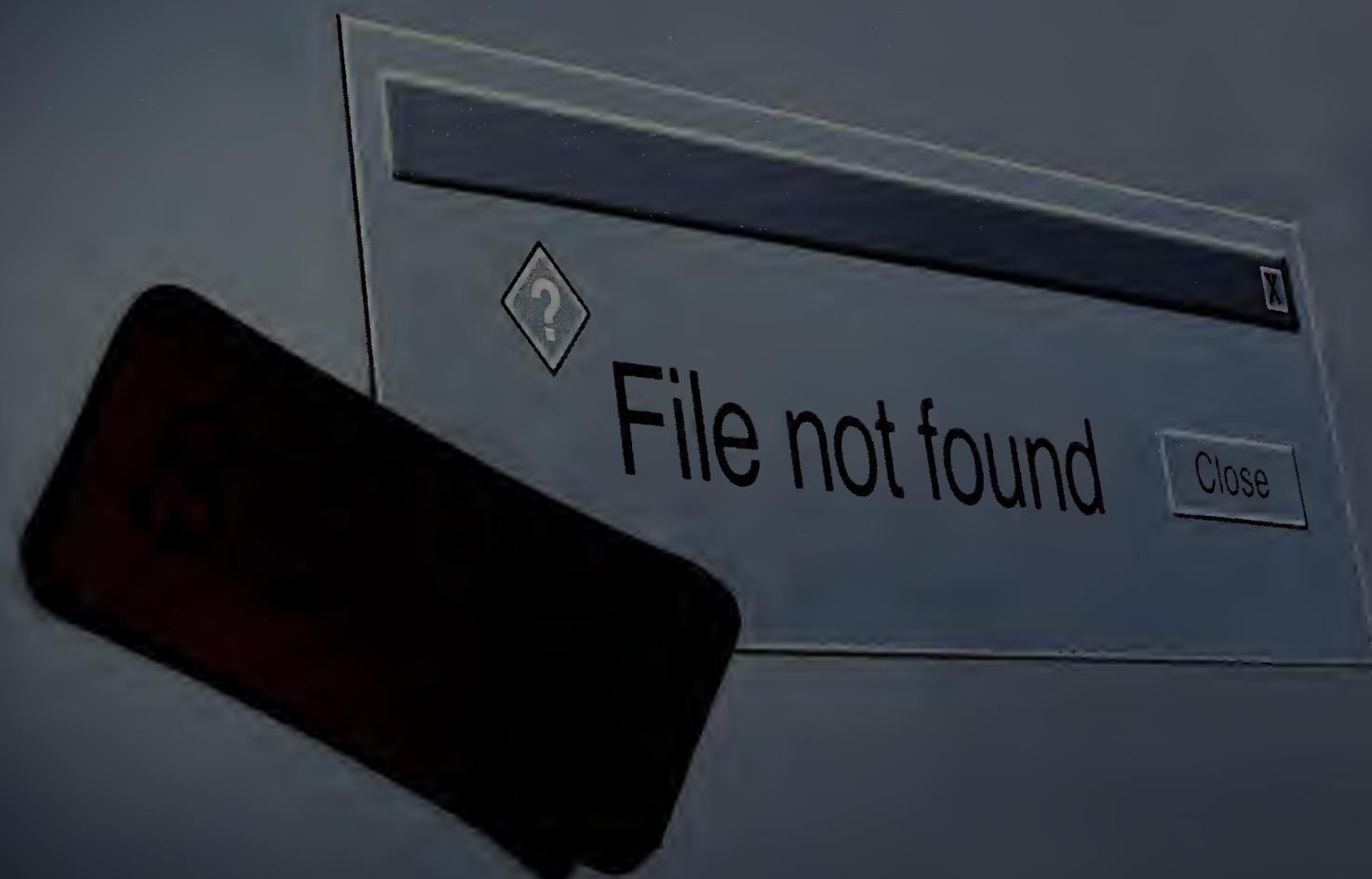
IBM's preassembled Linux clusters are meant to simplify deployments for users.

THE NEW CLUSTERS FEATURE:

- Four to more than 1,000 linked servers
- Full systems administration, maintenance and workload management software
- Bundled, installed and configured server-level software

The server clusters will initially be offered in configurations designed for five targeted uses: high-availability applications, database servers and e-commerce, e-mail and transaction processing systems.

Software from IBM and other vendors will be packaged with the different configurations, IBM said. For example, the e-commerce clusters include IBM's WebSphere application server and electronic business software, while the database clusters come with the enterprise version of its DB2 Universal Database. ▀



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BRIEFS**J.D. Edwards Closes Deal for CRM Vendor**

Denver-based business applications vendor J.D. Edwards & Co. completed its acquisition of Youcentric Inc., a Charlotte, N.C.-based developer of customer relationship management (CRM) software, for \$6 million in cash plus stock valued at \$80 million. J.D. Edwards also released an initial CRM offering combining its OneWorld Web portal with Youcentric's tools.

Ex Commerce Head Named SBC President

San Antonio-based telecommunications and networking vendor SBC Communications Inc. named former Secretary of Commerce William Daley its new president, effective Dec. 1. Daley, who also chaired Al Gore's presidential campaign, will oversee strategic planning, regulatory matters, government initiatives and international affairs at SBC.

Deal to Hurt SunGard Earnings 'Modestly'

SunGard Data Systems Inc., which bought Rosemont, Ill.-based Comdisco Inc.'s disaster recovery unit after a bidding war with Hewlett-Packard Co., said the operation will likely be "modestly dilutive" to its earnings for this quarter and the first half of next year. Wayne, Pa.-based SunGard estimated that the Comdisco unit earned \$460 million in revenue during the fiscal year ended Sept. 30.

Short Takes

Sunnyvale, Calif.-based managed services provider LOUDCLOUD INC. reported a loss of \$40.7 million on revenue of \$14.3 million for its third quarter ended Oct. 31, but it reduced the loss forecast for the full fiscal year. . . . FRONTRANGE SOLUTIONS INC., a CRM vendor in Colorado Springs, named Patrick Bultema its president and CEO.

IBM Puts Increased Focus on IT Security

Demand surge after attacks prompts expanded offerings, centralized planning

BY JAIKUMAR VIJAYAN

IBM LAST WEEK announced a series of steps aimed at expanding its presence in the IT security market in response to an increased demand for such services after the Sept. 11 terrorist attacks on the U.S.

IBM is increasing the number of security and data privacy services it offers and creating a new security office that will identify emerging trends and coordinate technology development. The company said it also plans to work with New York-based Kroll Inc. to provide security assessment services (see box).

"We felt it was important to get out there and respond to customer needs by marshaling our capabilities," said Rusine Mitchell-Sinclair, who was named general manager of safety and security for the IBM Global Services unit.

Expanded offerings under the new initiative include virtual private networking and authentication services, as well as secure content delivery and mobile connectivity programs, IBM said. The vendor said it's also now focusing more on intrusion detection, vulnerability assessments and managed firewall services for hosted applications.

Pulling It Together

Many of those capabilities have already been available from various groups within IBM Global Services, said John Pescatore, an analyst at Gartner Inc. in Stamford, Conn. But now, he added, the company is trying to pull everything together under a more coordinated security services portfolio.

"They're mostly just reorganizing . . . their services," he said. "Like others, they want to

capitalize on all the attention around security after Sept. 11."

Since the attacks, there has been a surge in demand for IT security services, especially those involving intrusion-detection capabilities, as well as for assessments of vulnerabilities and compliance with corporate security policies and regulatory requirements, said Michael Rasmussen, an analyst at Cambridge, Mass.-based Giga

Information Group Inc.

For example, 53% of 174 IT managers surveyed last month by Computerworld and New York-based J.P. Morgan Securities Inc. said they plan to spend a higher percentage of their budgets on security next year [News, Nov. 19].

Efforts such as the ones announced this week are taking IBM — and its staff of about 3,000 security consultants and developers — deeper into territory that's currently occupied by dozens of relatively small, specialized vendors.

"IBM is a huge company,"

Security Zone

The security-related moves announced by IBM last week include the following:

► An expansion of the information security and data privacy services offered by the IBM Global Services unit.

► The creation of a corporate-level office that will centrally coordinate development of security technology.

► A plan to work with consulting firm Kroll on combined IT and physical security assessments for users.

Rasmussen said. "But there is quite a demand for security services, so I don't know whether [its new initiative] will hurt anyone else." ▀

Grid Computing Gets Push From Top Server Vendors

Compaq, IBM, Sun all target system pooling technology

BY TODD R. WEISS

Grid computing, which had already caught the attention of IBM and Sun Microsystems Inc., is now being targeted by another major hardware vendor: Compaq Computer Corp.

The three server rivals this month separately announced developments related to grid computing, in which groups of computers in different locations are harnessed together to provide large amounts of processing power for scientific research applications and other data-intensive uses.

Compaq said it's getting into the grid arena through a deal that will combine its AlphaServer Unix systems and Linux-based versions of its ProLiant servers with technology being developed by Platform Computing Inc. in Markham, Ontario.

Compaq will sell, install and support Platform's grid tech-

nology, which is expected to include a commercialized version of an open-source tool kit developed by the Globus Project, a research initiative funded by various U.S. government agencies.

IBM released an upgraded version of the Globus Toolkit for use with its eServer systems and included new support for its AIX derivative of Unix in addition to existing

JUST THE FACTS

Shared Resources

Server vendors such as IBM, Sun and Compaq are taking an increasing interest in grid computing, a concept for linking multiple systems to combine their processing resources.

HOW IT WORKS: Different servers, often in different locations, are connected via the Internet and can then be used to share data and pool computing power via open-source protocols and software.

POTENTIAL USES: Scientific, medical and academic research; advanced product design; complex financial modeling; pharmaceuticals research.

support for Linux. It also signed a deal to help build a grid setup in North Carolina for use in genomic research.

Sun released a beta version of an upgrade for its Sun Grid Engine Enterprise Edition software that's designed to make it easier for users to set up "campus grid" systems that link computer resources at several different facilities. In addition, Sun said it's extending the interfaces between its software and grid computing technology developed by Avaki Corp. in Cambridge, Mass.

Rob Batchelder, an analyst at Gartner Inc. in Stamford, Conn., said the grid concept has long been a "utopian vision of what computing can be." But while the technology shows promise for scientific uses, Batchelder said, one big limitation is a lack of clear business applications. "There are not a lot of obvious uses in the [corporate] enterprise," he said.

However, Stacey Quandt, an analyst at Giga Information Group Inc. in Cambridge, Mass., said that some business users should be able to benefit from grid computing approaches. She added that within the next 12 months, uses will likely be found in vertical markets such as the pharmaceutical and auto industries. ▀

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PATRICIA KEEFE

Stumbling at the Altar

THE LAST THING that Hewlett-Packard's Carly Fiorina and Compaq's Michael Capellas need right now is a bunch of angry users. The executive duo already have their hands full trying to mollify skeptical analysts, cautious shareholders, concerned government agencies on

both sides of the Atlantic and resistant, outspoken founding families.

Tripping over a 30-year-old product line isn't particularly graceful as you make your way down the aisle in a corporate marriage.

On the other hand, continuing to build your company's systems — and its competitive future — around a 30-year-old product line in an era when three-year product life cycles are the norm isn't exactly the most strategic move many HP e3000 users could be making right now. However beloved

(remember the Wang VS?), the e3000 is a fossil.

What's needed for HP and its e3000 users is a strong dose of reality programming.

One of the biggest issues dogging the proposed merger of Compaq and HP is their overlapping technologies. Axing the e3000 line roughly three months after laying out its five-year plan to users [Page One, Nov. 19] was a stupid move. So it would behoove a combined HP/Compaq to be more sensitive as it moves forward. It needs to be

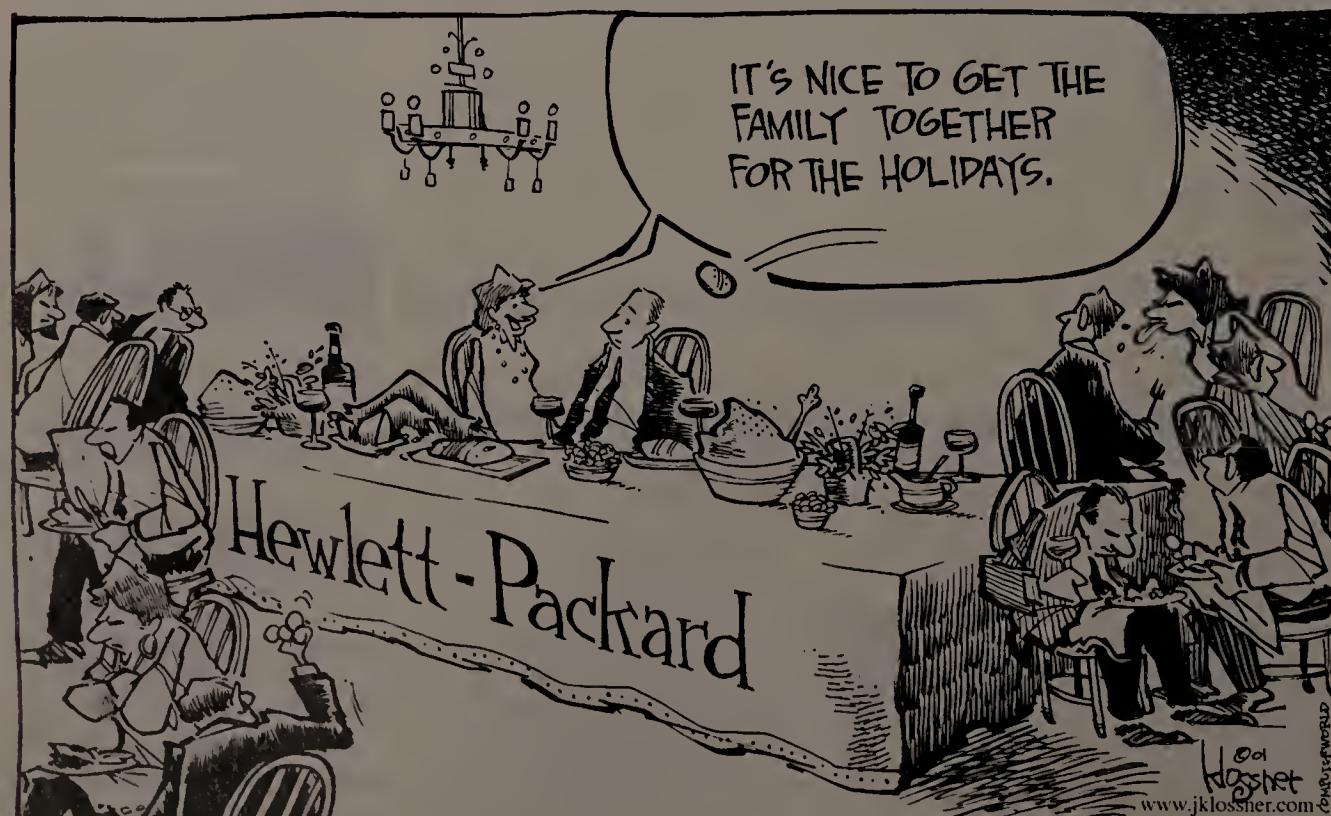


PATRICIA KEEFE is editorial director at Computerworld. You can contact her at patricia_keefe@computerworld.com.

especially careful when positioning any product that is a candidate for the ax. Don't mislead users. Constructing a longer-term product support program for older systems while structuring affordable deals that will enable less painful migrations builds good will.

As for users, news of the pending merger should have hastened a quick survey of the two companies' product lines. The fact is, HP has tried to appease e3000 users, but the technology is a long-term losing proposition. IT managers should have seen this coming, and they should have strategies in place to deal with it. Given the small installed base, factor in the age of the product line, add in the proprietary operating system and you should be asking yourself: Is further investment really wise? (The answer is no.)

HP/Compaq and its customers need to reach an accommodation on how to equitably retire product lines. If they can't, IT careers will be derailed, and this marriage will not succeed. ▶



PIMM FOX

IT Helps Speed Product Rollouts

WHAT YOU DON'T KNOW might not hurt you, but it can cost a bundle and hamper good decision-making unless you use IT to systematically apply the historical knowledge you've gained about your company and industry.

For example, in the pharmaceutical industry, FDA oversight requires time-consuming and expensive clinical trials to test the efficacy of drugs before they're approved for use. These trials are designed to reveal how well a drug works for a well-defined ailment. So while a drug may be a viable treatment for a variety of illnesses, its prescription label can reflect only what it was tested for. The drug Doxycycline has been approved by the FDA as effective for combating anthrax, though it wasn't originally labeled as such because a specific clinical trial wasn't conducted.

After all, why would a company spend money testing for effectiveness against something as unlikely as anthrax?

But by using IT to create simulations and models, virtual clinical trials can be conducted to cut the cost and time of actual trials.

Fantasy IT? Hardly.

Mountain View, Calif.-based Pharsight Corp. has developed a suite of programs that takes advantage of what is already known about certain drugs, patient test groups, dosage histories and huge amounts of clinical data to produce detailed reports to guide drug companies in compiling more efficient trials.

Using simulated data sets, Pharsight makes it possible for clinicians to plot better strategies to measure the potency of drugs and response rates and even gauge whether it would make a significant difference to expand or contract the number of patients in a particular trial. With a mix of C++, Visual Basic scripts and XML schemas running on Windows NT servers, the rich repository of data about previous trials can be factored into the decision-making process for future drug tests. And virtual ones can be run over and over again at a fraction of the cost of real-world clinical trials.

This type of data mining and application isn't



PIMM FOX is Computerworld's West Coast bureau chief. Contact him at pimm_fox@computerworld.com.

NEWSOPINION

confined to the pharmaceutical business. In the automobile industry, car companies have been able to simulate noise, vibration and handling techniques using historical data to find out how a car will drive long before a prototype is built.

At the high end of the spectrum, Volvo employs a Silicon Graphics Origin 3800 server with 128 CPUs to run crash simulation application software as part of the development of safer cars.

It's time for every business to test and make decisions using previous experience. And let IT systems do the heavy lifting. ▶

MICHAEL GARTENBERG Keys to Success For Ubiquitous Computing

LAST MONTH, I discussed how ubiquitous computing meets the criteria that allow it to potentially displace the PC as the information appliance choice for most business users. As I define it, there are three critical components of ubiquitous computing: Web services, wireless connectivity and a diversity of information devices. While ubiquitous computing might be lacking in the first two, it's dependent on wireless connectivity to be successful.

Despite the issues of different standards for wireless networks, there are three major connectivity types that will help the growth of ubiquitous computing: wireless personal-area networks (PAN), wireless LANs and wireless WANs. Each can be broken down into different competing technologies, and IT managers should get to know them.

For multiple devices to work as a model, they will first need to speak to one another through a PAN and exchange relevant data. The key is *relevant* data being transmitted to each device. While I doubt that I will ever want to view a spreadsheet on my mobile phone, synchronizing my Outlook contacts would be ideal. Here, two technologies will dominate: Bluetooth radio and Infrared Data Association (IRDA) infrared. While there has been a slow uptake of Bluetooth as a standard, it works, and works well. IRDA is also a contender for synchronization and beaming data. The irony is that just as IRDA has matured to a point of usability,



MICHAEL GARTENBERG, former vice president and research area director at Gartner Inc., is an independent technology analyst and consultant. Contact him at michael.gartenberg@mindspring.com.

mobile phone, synchronizing my Outlook contacts would be ideal. Here, two technologies will dominate: Bluetooth radio and Infrared Data Association (IRDA) infrared. While there has been a slow uptake of Bluetooth as a standard, it works, and works well. IRDA is also a contender for synchronization and beaming data. The irony is that just as IRDA has matured to a point of usability,

many laptop vendors are removing infrared ports from their systems to save money.

The second critical form of connectivity is the wireless LAN. Already popular in airports, hotels and other venues, the dominant 802.11b standard will become more popular. Its successor, 802.11a, will emerge in products by year's end with increased performance. But the final specification for 802.11a hasn't been ratified and adopted worldwide, so you should hold off on deployment until final standards emerge (at least until mid-2002). For now, 802.11b should be considered for wireless LANs in homes and businesses, or anywhere a shared, fast Internet connection is needed.

As ubiquitous computing grows, the third connection type — WAN connectivity — will become critical. Over the next two years, fast connections using General Packet Radio Service, which enhances the GSM standard that supports data, and its competitor, Code Division Multiple Access 2000, will offer wireless speeds of 56K to 144K bit/sec. Replacing slower Cellular Digital

Packet Data, which enhances analog cellular networks and supports speeds of a mere 19.2K, these so-called third generation, or 3G, networks, will reinvigorate carrier revenues for the wireless telecommunications companies and put great pressure on wireless Internet service providers to compete. With digital handsets offering fast connectivity and linked via Bluetooth or IRDA to PDAs and laptops, the notion of your data anytime, anywhere will become reality.

Wireless connectivity has suffered from a reputation of mediocre performance, high cost and confounding complexity. Over the next three years, the maturing of the wireless PAN, LAN and WAN will enable the third wave of ubiquitous computing. I believe that by the end of 2004, every information device designed for business use will ship with at least two of these types of connectivity. Next month, I'll discuss the new and diverse types of devices that will take advantage of all this connectivity — and why you'll want to carry up to three of them at all times. ▶

READERS' LETTERS

Getting Off the Leash

I READ PATRICIA Keefe's Nov. 12 editorial ["Dereliction of Duty," News Opinion] with a mixture of amusement and pity. Do you really think users are going to do anything to bring Microsoft to heel? Microsoft will do what it has always done: Promise change in the *next* version. And it will deliver just enough to keep most of the computer-using world on a snug leash. The rest of us will do whatever is necessary to avoid that leash.

What's your choice?

Pete Grubbs
Senior editor
OS/2 e-Zine
Brookville, Pa.

SINCE THE Tunney Act became law in 1973, the courts have attempted to understand its meaning. In 1995, when Judge Stanley Sporkin attempted to invoke it and throw out the consent decree between the DOJ and Microsoft, a three-judge panel from the District of Columbia

Circuit Court of Appeals overruled him, stating that the act is to be invoked only if an antitrust settlement would make a "mockery" of the court. Unlike 1995, this time Microsoft was found liable by that same appeals court of being an abusive monopolist, before the Bush administration, in effect, threw the case out. In my eyes, this puts the burden on the DOJ to show that the present decree doesn't make the judicial system a sham.

Steven Rubenstein
Murfreesboro, Tenn.

Far From Extinct

ACCORDING TO the article "HP to Scrap e3000 Server Line" [Computerworld.com, Nov. 14], "The demise of the HP e3000 series is no surprise because proprietary or specialized operating environments have lost favor with customers in recent years, said Rich Partridge, vice president of enterprise servers at D.H. Brown Associates Inc." Phew! I want to

thank Partridge for helping me avoid the mistake of choosing another proprietary system like MPE/iX. I'll move to a more open system like Microsoft Windows NT™, Windows 2000™, Windows XP™, or HP-UX™. Maybe I'll really go open and run Red Hat™ Linux and add HP Secure OS for Linux™, HP Multi-Computer/ServiceGuard™ and HP OpenMail™. I'll never have to worry about getting stuck with a proprietary system again.

Mark Wonsil
President
4M Enterprises Inc.
Royal Oak, Mich.

Here Comes the Bloat

AS A DEVOTEE OF usable handheld computing, I have to jump in on the subject of the Tablet PC ["Tablet PCs Inspire Business Use Hopes," News, Nov. 19]. I have a 3-year-old Vadim Clio 1000 that, for all intents and purposes, fulfilled the main benefits of a Tablet PC. It was my Internet appliance and

PDA for two years. The Clio's downfall was Microsoft's decision to abandon Windows CE Professional as a strategic platform and curtail further integration with Office. The Clio works, didn't cost half of what the proposed Tablet PCs will cost and is already obsolete, if you believe Microsoft. I'm afraid Tablet PC will be one more bloated, overpriced and underperforming product, except in a few vertical markets.

Mike Allen
Richmond, Va.

More Letters, page 28

COMPUTERWORLD welcomes comments from its readers.

Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

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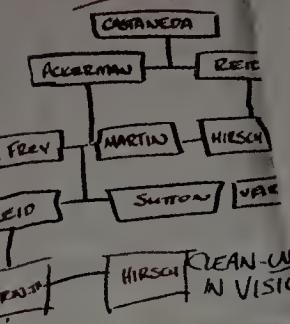
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9:00 AM — CONVENTION

- introductions

9:30 AM — Strategy Overview

→ Robin

10:00 AM — Methodology

→ Abby

10:30 AM — Results

→ Carol

11:00 AM — ACTION PLAN

→ Scott

11:30 AM — Quantify Results

→ Lorin

— LUNCH —

→ Michael

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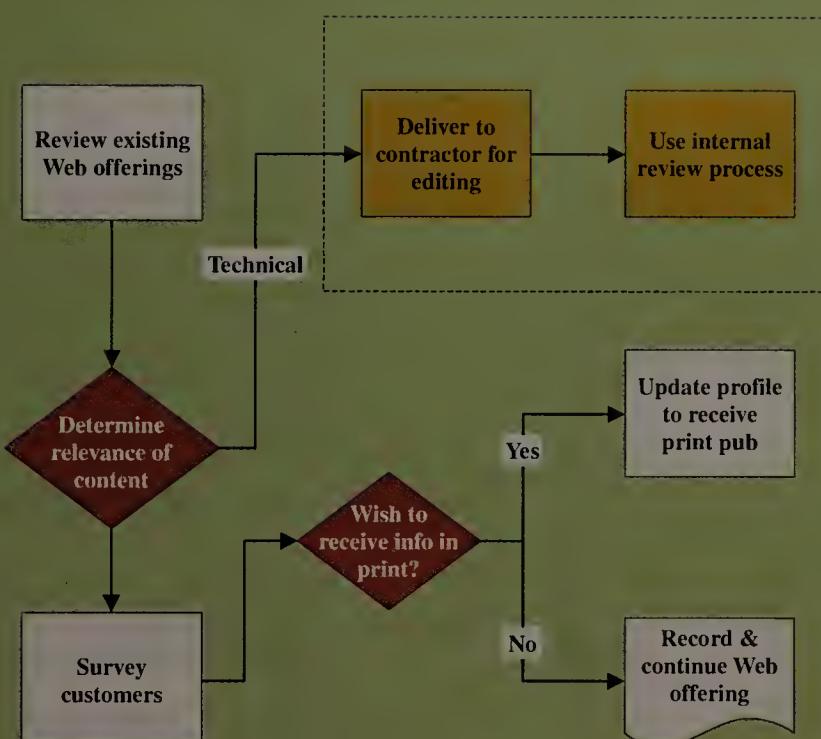
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All Above to Contractor

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Microsoft

NEWSREADERS' LETTERS

COMPUTERWORLD November 26, 2001

Getting Out of DLL Hell

NICHOLAS PETRELEY is right on the money with his assessment that DLL hell and the other complexities of Windows are

a means by which Microsoft makes it difficult to run Windows apps on non-Windows operating systems ["Side-by-Side Hypocrisy," Technology, Nov. 12]. These complexities also keep the riffraff out of

Windows software development, ensuring that only the large and well-funded can write Windows software and reducing competition for Microsoft. In the past, people have often chalked up the un-

due complexity of Windows to sheer ineptitude or software-development anarchy at Microsoft. These explanations don't square with Microsoft's overall prowess in other areas of the software business. Pe-

treley's hypothesis does. The sorry by-product of needless software complexity is low reliability, which all of us have experienced ever since Windows hit the streets.

Ben Myers

Owner

Spirit of Performance Inc.
Harvard, Mass.



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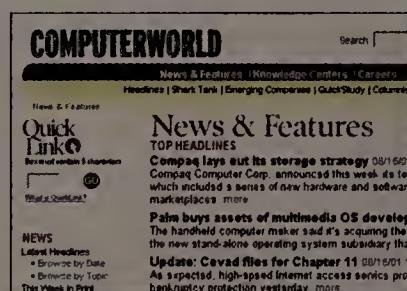
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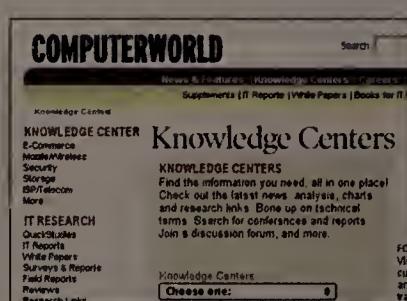
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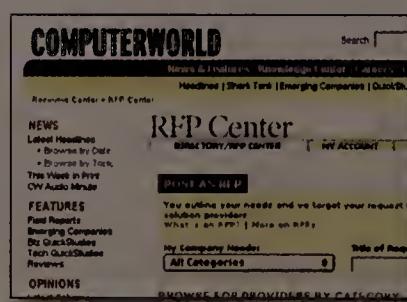
You should also be here.



And here.



And here.



And here.

I ENJOYED and was informed by this column. While I have no reason to doubt his report that Microsoft may have intentionally obfuscated the solution to DLL hell, I would like to point out that his proposed "trivial" solutions to the problem are perhaps a tad too trivial. In particular, the suggestion that Windows follow the Unix convention of renaming each version of a DLL (which Microsoft has in fact tried, as in MSVCRT40.DLL) would only take us to a different, and perhaps even less tolerable, part of hell. Microsoft would have to distribute every version of every system DLL indefinitely (to support old applications that hadn't been upgraded), increasing Windows' disk footprint and install time. All application vendors would have to rebuild and redistribute their apps to take advantage of bug fixes, security patches or other improvements, while users would spend hours installing those upgrades. Help desk staff would be lost in a quagmire of multiple application and DLL versions and interdependencies. Additionally, this practice would defeat some of the benefits of DLLs (which Petreley forgot to mention). To cite only one, the relatively uniform look-and-feel of Windows applications is due in part to standard dialogs and other interface elements that are implemented in DLLs. As the Windows GUI has evolved, old applications have gotten free face-lifts, and usability has been enhanced. Yes, DLL hell exists; I, like you, have been there. But I doubt that the way out is as hard as Microsoft says or as easy as Petreley suggests.

Chris Pearson
Consulting software engineer
Lake Oswego, Ore.



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EMERGING COMPANIES 2002



Penny Pinchers

**EMERGING COMPANIES
2002**

With a dismal economic outlook for the nation and trouble at home and abroad, austerity is the watchword for IT. Computerworld's Emerging Companies to Watch in 2002 are the technology vendors with big ideas to help IT squeeze savings out of everything from freight transportation to desktop management to employee travel.

Editor's Note

ABADLY BRUISED ECONOMY hasn't eliminated the need for good ideas; it's just weeded out some of the bad ones. The technology sector in particular has taken a nasty beating in the past six months — hardly a day passes without news of more layoffs, more missed numbers. Yet

when Computerworld's Allison Wright and the rest of our research department put out our annual call for Emerging Companies candidates, we received more than 450 nominations from young technology vendors that claim to have the answers and are eager to slug it out with the heavyweights.

Problem is, only a small number of these companies truly have their heads in the game. The ones we've identified in the following pages, Computerworld's 100 Emerging Companies to Watch in 2002, are the scrappy fighters that we think have the right stuff. They stay close to their corporate IT customers, deliver innovative tools and services and are agile enough to stay a step ahead in a tough economy and fast-paced sector. And in these times of tight venture capital, they've also gone a few rounds with investors and therefore are thrifty with their cash and savvy with their business plans.

This year, more than ever, IT managers are looking to partner with technology vendors that can give them a fast return on investment, that can answer an immediate business need and that will be around to see these projects through to completion. This special section will introduce you to these 100 Emerging Companies through their customers: a utility that reduced administrative costs with a streamlined corporate portal, an airline that extended its Web-based system with wireless technology and an auto safety restraint maker that slashed freight costs and inventory levels with supply chain management software, to name just a few.

These customers also offer their advice for choosing and partnering with start-ups and the lessons they've learned along the way. And to help you sort through this sea of new tools and services, we looked at the technologies that fulfill a specific business need, department by department, from operations to sales to marketing, and talked with the customers who are getting value from them now.

Because, even as the economy reels, the need for new technology applications will always be here. And there's never a bad time for a good idea. ▶

Ellen Fanning is special projects editor at Computerworld. Contact her at ellen_fanning@computerworld.com.

Quick Link

Look for additional stories, resources and links about start-ups and the Emerging Companies to Watch in 2002 at: www.computerworld.com/q?1290

SERGE BLOCH

“

Our job is to see how we can prosper. If that means using an emerging company, we're going to do that.

LISA HAMBLET (RIGHT), VICE PRESIDENT OF BUSINESS-TO-BUSINESS E-COMMERCE, STAPLES INC.



SETH RESNICK

IT Goes on a Bargain Hunt

EMERGING COMPANIES 2002

This year's Emerging Companies to Watch have one important thing in common: They're helping IT keep an eye on the bottom line in times of economic uncertainty. By Steve Ulfelder

DID YOU HEAR THE NEWS? It came with a shout on Sept. 11 and a quiet sigh as the economy eroded further. Times have changed. Growth is out; efficiency is in. If you want to prevail in the new economy, forget about that fancy e-commerce initiative that may or may not pay off down the road.

Business once again wants IT to focus on reducing costs and doing more with fewer resources. And with the nation at war and the economy in a true tailspin, it wants to see payback on these investments immediately.

Staples Inc. got its payback within six months with the elimination of one full-time IT position. The Framingham, Mass.-based office supply company installed content management software from newcomer Trigo Technologies Inc. in Brisbane, Calif., on StaplesLink, its business-to-business Web site.

Previously, only a skilled IT worker could populate files to the Web site. Trigo's simpler interface means that average users "can do it themselves," says Lisa Hamblet, vice president of business-to-business e-commerce at Staples. "We've reduced our need for IT resources."

That experience sums up the changing demands on IT in a nutshell. Just last year, a whole passel of the technology providers *Computerworld* identified as the 100 Emerging Companies to Watch were intent on helping enterprises grow. Nearly one-third of last year's stars — 31 out of 100 — were either e-commerce companies or online market exchanges. Those are broad categories, to be sure, but the emphasis of these new vendors was clear: Our tools will help grow your business.

In these brutal economic times, lower corporate earnings and a sudden mistrust of the Internet's potential as a channel have changed all that. In its annual survey on corporate IT spending, Boston-based AMR Research Inc. asked 700 companies, 42% of which have annual revenue of more than \$1 billion, what drives IT spending. "Last year, the top answers were all around revenue generation," says Bob Kraus, AMR's vice president of quantitative research. "This year, the biggest answer was 'cost-cutting' and the second 'efficiencies.'"

These are precisely the promises of this year's emerging companies. Some, such as Plumtree Software, let companies save on production costs by creating a single corporate portal. Others, such as Naperville, Ill.-based Visual Insights, help marketing departments better analyze the returns on their Web site investments. While their products are closely in tune with companies' various business functions (see stories on pages 40-48), this year's companies to watch have a couple of things in common: They tend to focus on the expense side, rather than on the revenue side,

and they offer a quick, often dramatic return on investment. "It's pretty clear the way to get IT spending approved now is with a good ROI story," Kraus says.

But why not cut costs with an Oracle, a Hewlett-Packard or an IBM? After all, it's been a rotten year for start-ups — VentureOne Corp., a San Francisco-based research firm, says venture investments have dropped for five straight quarters. Companies are struggling with the decision to hitch their wagons to young, untested companies. Though IT managers say start-ups allow them to shape the products and demand top-flight service, the risks are undeniable; you must perform extra due diligence simply to make sure the vendor will be alive in 12 months.

Squeeze Value From Each Technology Investment

When cost-cutting is the goal, head count is a plump target.

Nancy Alter, director of IT customer support at Horsham, Pa.-based Penn Mutual Life Insurance Co., has reduced her help desk staff from seven to five while increasing internal customer satisfaction. She gives much of the credit to Courion Corp., a Framingham, Mass.-based vendor of password management and user authentication tools.

Penn Mutual's help desk fields about 100 calls per month from employees who have forgotten their passwords or have other password-related problems. The vast majority of the calls come from remote users, Alter says; Penn Mutual has 500 home-office users, 300 field associates and about 1,200 roving agents.

Alter's problem was that the insurer is a Novell shop, and with Novell, it's impossible to reset passwords without system administrator privileges.

"We would have had to give everybody [on the help desk] the keys to the

Courion Corp.

www.courion.com

What's the edge? Offers self-service password and directory management software to reduce support costs, increase security.

kingdom" in order to let them resolve password problems on the initial phone calls, Alter says. The help desk staffers on their own could resolve only about 15% of the calls. The rest of the time, they had to get some information from end users and call in Penn Mutual's Information Protection department; only that group could reset passwords, she says.

Last year, Penn Mutual began using Courion's Password Courier, a Web-based application. The product is intended to function as a self-service tool for end users, but the insurer isn't using it that way (though Alter hopes to make that move next year). Instead, the help desk staff assists users but doesn't have to have high-level privileges. Alter says the help desk can now resolve 50% of all password resets, freeing up highly paid security professionals for jobs that have a greater value for the company, such as analyzing intrusion alerts.

"Both the help desk and [security staff] spend more time fixing more complex problems," Alter says. "We can give them more enriching problems and more training."

Users' productivity has increased as well, Alter says, because the time required for a typical password reset has been slashed from 15 minutes to less than five.

Find Cheaper, Faster Ways to Do the Basics

WebEx Communications Inc.

www.webex.com

What's the edge? Designs, develops and deploys a global network for multiplatform, real-time data communications.

Countrywide Credit Industries Inc.'s Wholesale Lending Division has used technology from an emerging company to squeeze more value out of an unglamorous but expensive

function: training.

Until the middle of last year, the Calabasas, Calif.-based lender did all employee training live in one of three locations. "We had to fly people in and pay for airfare, meals and ground transportation for three to five days," says Ron Schneider, first vice president of the division. "And of course, when you do that, you're taking people out of the office."

Countrywide began searching for a cheaper training method and found WebEx Communications Inc., a San Jose-based company that offers real-time multimedia communications.

Countrywide's IT group performed tests to make

Think Like a Venture Capitalist

Considering a partnership with a start-up? The following tips can help mitigate your risk:

TRACK RECORD. The management teams at start-up companies always look good on paper, so Michael Carus, chief operating officer and chief financial officer at Jerusalem Venture Partners in New York, says he asks if the team has ever actually produced anything — at a previous start-up, for example, or perhaps as a team at a large company. "If the nucleus [of the management team] has proven they can bring something from the design phase into the market, it gives us a high degree of confidence," he says.

THE FUTURE IS NOW. With today's tight budgets, don't sign on with an emerging company unless it can add value to your

company's bottom line quickly. "That's different from what it was a year ago, when you could invest in both your needs and your wants," Carus says. "Now you want it clear that there's going to be value creation soon."

PARTNERS COUNT. IT professionals may be smitten by an emerging company with sexy technology. But is that technology marketable? To find out, Jerusalem Venture Partners studies a start-up's strategic partnerships. "If they've been able to convince Cisco that Cisco can make money off their products, they're probably on to something," Carus says.

— Steve Ulfelder

IT Goes on a Bargain Hunt

sure WebEx Meeting Center, a hosted service, wouldn't affect the performance of its network or other applications. Once the company was convinced that it wouldn't, it made an initial investment of about \$200,000, Schneider says, and shifted almost all of its training to the Web.

According to Schneider, the results have been eye-opening. "In [all of] '99, we trained 892 people [in live settings]," he says. That number was limited by expense, schedules and the reluctance of branch offices to go without productive employees for three to five days. "Since we started using WebEx in July 2000, we've trained 4,060 people, and none of them had to leave the office," Schneider says.

And in light of the recent terrorist attacks, analysts predict that business for services like WebEx will increase steadily as companies seek to reduce airline travel.

Countrywide estimates that it saved \$3.65 million from July 2000 through August 2001 on travel-related expenses such as airfare, ground transportation, hotels and meals. Schneider says those savings take into account only hard-dollar expenses and would be even more impressive if regained productivity was factored in; because employees using WebEx training remain at their offices, they squeeze some work in, even on training days.

Look for Efficiency in Every Nook of Your Company

Efficiency and savings were the goals when Charlotte, N.C.-based utility Duke Energy Corp. observed that several of its business units were pouring resources into their own intranets. Catherine Stancombe, Duke Energy's human resources e-business director, says that while the individual intranets' content was fine, the company wanted to reduce administrative and general costs. The ensuing search led to Plumtree Software.

San Francisco-based Plumtree's Corporate Portal offered Duke Energy an efficient way to put information on its 22,000 employees' desktops. Initiated last December, the company portal has already

Plumtree Software

www.plumtree.com

What's the edge? Offers a full-featured portal platform that's powered by a patent-pending massively parallel portal engine for scalability.

made obsolete a hard-copy newsletter that used to be mailed to each worker's home address. Duke declines to say exactly how much money it has already saved using Plumtree but hints at a seven-figure sum.

Put Emerging Companies Through the Paces

Buying a product or service from an emerging company is risky. "We've been burned by e-businesses," says Stancombe. "On the other hand, we've probably been burned less than other companies."

Duke Energy puts potential vendors — large and small — through a rigorous proof-of-concept exercise, according to IT architect Chuck Burch. "We pull in the top three [vendors vying for any contract]," he says. "They have three to five days to get their system up and running on a small scale." Burch says Plumtree won Duke's business "by getting up and running without a lot of custom coding."

But in the case of young companies, the technology is often the least of your worries. The past 20 months

NetReality Inc.

www.net-reality.com

What's the edge? Monitors real-time WAN conditions and shapes traffic so priorities are enforced and bandwidth use is restricted only when conditions warrant.

have made IT managers all too aware that even vendors with great offerings can vanish overnight. "With an HP or an IBM, you can read a lot of information and talk to a lot of existing cus-

tomers," Hamblet says. "With emerging companies, you don't have that. You have to understand their funding, their management team — there's a lot of additional due diligence."

Overall, IT leaders say that while emerging companies present obvious risks, those risks are outweighed by their assets: agility, eagerness and flexibility.

"We're not looking to work with every start-up that comes along," Hamblet says. "Our job is to see how we can prosper. If that means using an emerging company, we're going to do that." ▶

Ulfelder is a freelance writer in Southboro, Mass. Contact him at sulfelder@yahoo.com.



ONLINE EXCLUSIVE

Read more about how IT's shifting priorities have affected buying decisions:

www.computerworld.com/q?24672

Running the Risk

IT leaders are very much aware of the risks posed by start-ups. When Ann Arbor, Mich.-based pizza chain Domino's Pizza LLC considered replacing its 12 Packeteer Inc. boxes with four Wise-Wan network application priority switches from Santa Clara, Calif.-based NetReality Inc., "we hadn't dealt with many small companies, so there was some concern," says Mike Clewley, a Domino's network engineering manager.

But two factors make that risk worthwhile for many enterprises. First, emerging companies are often the only vendors offering cutting-edge products; if you want the latest tools, you have to take some risks. That was true at Education Networks of America, a Nashville-based for-profit education company that serves school systems nationwide. Paul Van Hoesen, the company's chief technology officer, recently selected content-caching tools from Atlanta-based Chutney Technologies Inc. be-

cause Chutney's PreLoader caches Web content in a much more granular fashion than competing products. PreLoader lets companies cache a single paragraph or even a word, thus speeding delivery of personalized content — a major advantage to Education Networks, which customizes content for hundreds of school systems. "There aren't 80 [vendor] companies out there doing that," Van Hoesen says. "There are maybe two."

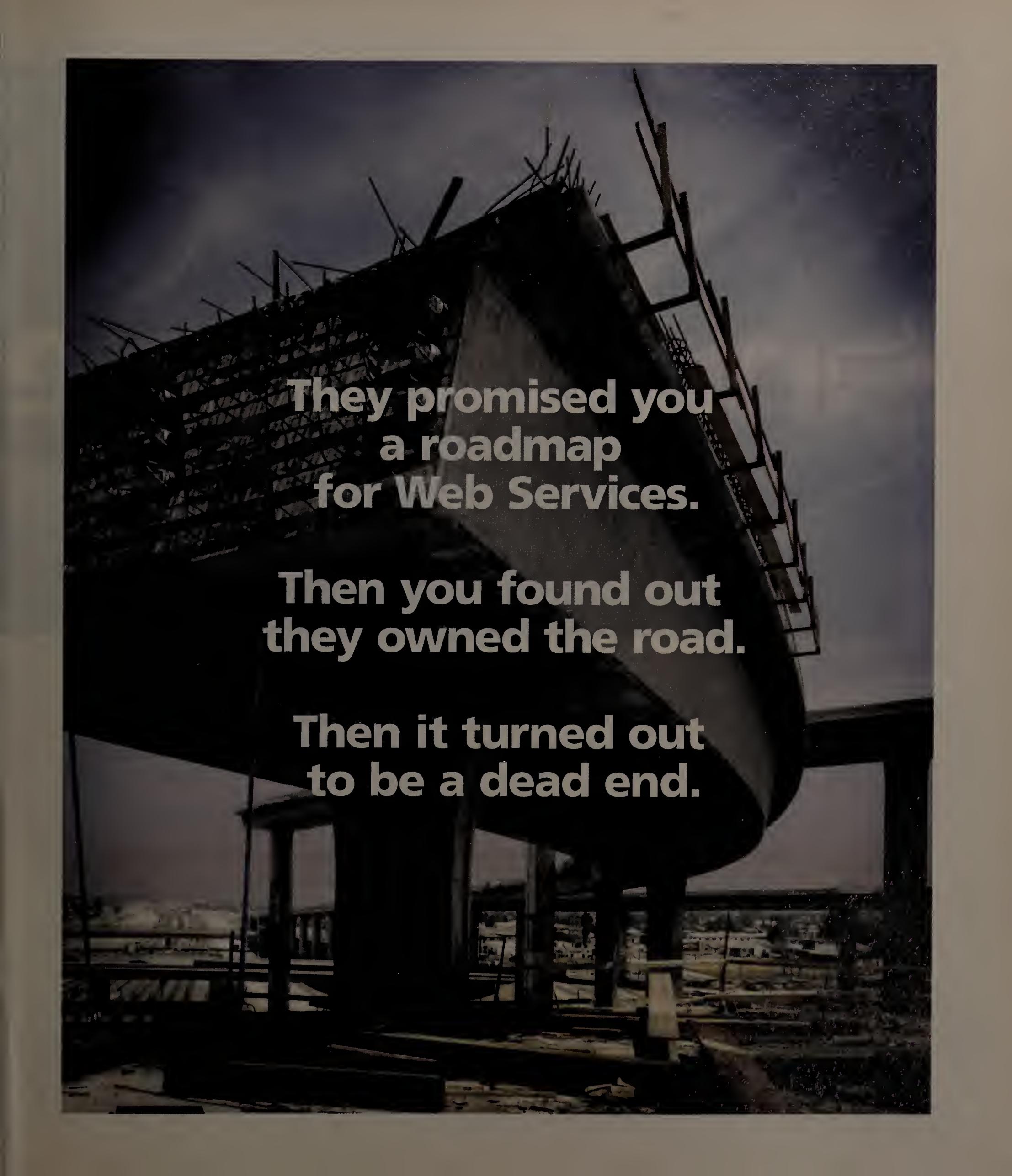
Similarly, when Plano, Texas-based Electronic Data Systems Corp. sought a better way to measure return on investment on its Web site, the company looked at approximately 30 vendors, according to Mike Minchew, EDS's manager of online commerce. He says he immediately noticed that with older, more established vendors, "the [software] footprint was just too big. With some, you needed a four-processor box with 2GB of RAM just to run it." Minchew says the bulkier products inevitably came from older, larger vendors, while "the newer companies were more in tune with today's needs for smaller, faster, lighter software that's easier to install."

EDS settled on eBizInsights from Visual Insights. Minchew says the payoff is that highly paid personnel now spend less time analyzing data at headquarters and more time generating revenue as consultants with EDS business units. "We've freed up two or three good people," he says. "And good people are expensive."

Another factor to consider is that taking a chance on a startup can win you influence and access you might not find at a big company like Microsoft or Computer Associates. Any midsize or large company that signs on with an emerging company is likely to get the red-carpet treatment — product customization, price breaks and rapid response when problems arise.

When Staples selected content management tools from Trigo Technologies, it actually helped mold Trigo's final packaged application, Trigo Enterprise. "They really worked with us," says Staples' Lisa Hamblet, vice president of business-to-business e-commerce. "Trigo acted like they had an opportunity to learn from us. A large, entrenched company might not have been as flexible."

- Steve Ulfelder



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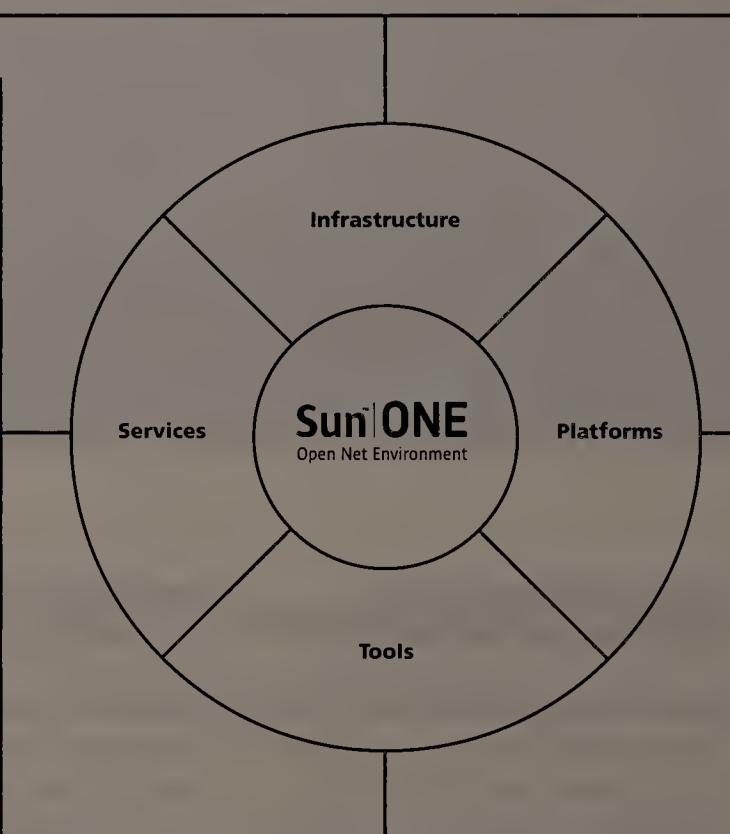
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EMERGING COMPANIES 2002

Untangling the Supply Chain

Logistics are everything to these companies. That's why they got well-acquainted with their emerging partners before joining forces.

By Mark Hall

RODGER HURST knew his company didn't have time to develop and test a Web-based inventory management system for its supply chain. So he rented it. The information services manager at \$4.1 billion Autoliv Inc. in Stockholm had been the product control manager at plants in Indianapolis and Madisonville, Ky., before moving into IT at the world's largest maker of auto safety restraint systems. That hands-on operations work gave him real insight into how the company's supply chain operation could improve.

One of his first moves late last year was to enhance communications between Autoliv and its hundreds of suppliers by adopting the hosted i-Supply Service from SupplySolution Inc. in Southfield, Mich. Because SupplySolution was a start-up, founded in 1999, Hurst also knew it was important to give the company a serious test.

SupplySolution Inc.

www.supplysolution.com

What's the edge? Addresses supply chain execution in manufacturing supply chains to increase their efficiencies.

make phone calls. No more finger-pointing or claims that this person or that one did not have the information," Hurst says.

Since the successful dry run, Hurst estimates that i-Supply has helped cut premium freight costs for Autoliv's Midwest plants by an astounding 92%, and inventory levels have fallen by 32% because plant managers immediately know where parts are in the supply chain and how long it will take for them to arrive. The enhanced communications make it less likely that inventory managers will be caught flat-footed without necessary inventory on hand, so they won't have to rush parts to their stockrooms.

In addition to the benefits of SupplySolution's outsourced software, Hurst says, "another advantage of

guished pedigree as a spin-off from Royal Dutch Shell Group of Cos.

"It would have been difficult to get my lords and masters comfortable to work with a 58-person company, whether it's in London or Palo Alto," Waddington says. But Shell's name and backing gave Kalido the clout to win Unilever's business, because it was considered to have a solid future. The fact that Kalido's data warehouse software provided Unilever with key performance indicators — which brands were selling in which markets through which distribution channels — helped get management buy-in as well.

working with a small company is that they respond quickly to change requests."

The need for responsiveness is a recurring theme. Users working with start-ups focused on operations technology are seeking more than a top-notch help desk or service organization; they want to interact with company leaders personally.

Arzoon Inc.

www.arzoon.com

What's the edge? Enables companies and their trading partners to use a single platform to procure, execute, monitor and reconcile freight services.

application from San Carlos, Calif.-based Arzoon Inc., they got to know the young company's leaders. Eisele says Union Pacific uses Arzoon's software to show shippers the options they have in delivering goods, including the economic benefits of using railroads.

"We naturally had a shared belief in the vision of the technology and the value that it would provide our customers," he says. "But we were also very impressed with the management team, in particular [Arzoon's] CEO."

Farid Dibachi has more than 20 years' experience working out logistics problems as co-founder and chief technology officer at Menlo Park, Calif.-based Diba

Corp., a network appliances company bought by Sun Microsystems Inc., and as a former Hewlett-Packard Co. executive. His background, Eisele says, mitigated the company's youthfulness and helped encourage Union Pacific's adoption of LIFE, Arzoon's software.

"Certainly, when you invest in a new company, you are betting on the horse, but you're also betting on the jockey," Eisele says.

Ned Sherry, supervisor for business applications at Kinetico Inc., a privately held 300-person water conditioning company in Newbury, Ohio, says the same thing about Port Washington, N.Y.-based Prism Visual

Prism Visual Software

www.prismvs.com

What's the edge? Integrates a company's operational systems with its financial systems instead of tying the operational systems with a separate back-office accounting package.

Software CEO Lorraine Keating. Sherry says being able to call a vendor's top executive with concerns about a product gives small firms an advantage over larger ones. Keating's retail and field sales team uses Prism's application to track deliveries and sales.

But it's not just a personal touch that makes for a good partner, Sherry says. The vendor must "be looking into the future. And that's what Lorraine and her folks are doing with slick technology that's going the way the industry is heading." ▶

Working with vendors that will be there when you need them is essential, says Greg Crandall, director of application development at Flowserv Corp., a \$2 billion industrial manufacturer in Dallas. And having a future in business means profitability.

That's one of the criteria he used when evaluating Salt Lake City-based consultancy SBI Inc. Crandall says it's always important to ask the question: "Are they making money?" The answer, he says, often determines the company's future.

— Mark Hall



Live Long and Prosper

Being a visionary is one thing, but finding a vendor that will be around in the future is most important to Dave Waddington, European foods information management architect at Unilever NV in Rotterdam, Netherlands. That's why he signed on with London-based start-up Kalido Ltd. to help manage Unilever's massive food distribution network. Despite Kalido's youth, it carried a distin-

Sold on Innovation

From enabling wireless customer access to streamlining complex sales processes, these companies turned to technology newcomers to help their sales departments get a leg up. By Mary Brandel

LAST SUMMER, Steve Jarvis realized that he was going to need a good, solid partner to help with Alaska Airlines Inc.'s project to extend its Web-based system with wireless technology. But when Jarvis, the airline's vice president of e-commerce, looked around, "most of the companies were start-ups by nature, losing money and funded by [venture capital firms]," he says.

Jarvis faced the same decision that many IT executives encounter today — whether to take the risk of working with a start-up on leading-edge technology projects. But that's where Jarvis parted company with many of his peers. He did something that, surprisingly, they don't often do: He checked references.

From the beginning, the idea of working with a start-up "was definitely a concern," Jarvis says. But with just a 35-person team running Seattle-based Alaska Airlines' \$340 million revenue Web site, he knew he needed some help. "Wireless is a fairly fragmented space. There was no way we could deploy quickly, let alone support all these different devices," he says.

Everypath Inc.
www.everypath.com
What's the edge? Provides software that supports all modes of interaction on handheld devices: online browsing, user notifications and off-line interaction/wireless synchronization.

That's why Jarvis got to know the executive team at San Jose-based Everypath Inc. before he signed on with the company. He also studied Everypath's technology infrastructure ("They were as strong on the back end as we were," he says), researched the venture capital funding and even spoke with one of the partners. After all that research, Jarvis says he had little doubt that Everypath could successfully help his company extend its Web-based check-in, flight status and mileage system to wireless users. In the end, "the speed of deployment was months faster than we could have done ourselves," he says.

Jarvis isn't the norm. According to Carol Roswell, an analyst at Gartner Inc. in Stamford, Conn., even when companies check references, it's often a cursory job. "Most people go through the motions and don't get at the heart of the matter," she says.

Jarvis went a step further, spending half a day with Palo Alto, Calif.-based ETrade Group Inc., another Everypath customer. "I asked them about the speed of deployment, quality of support, customer feed-

back on the application, where they were taking the system and whether they thought Everypath would be able to take those steps with them," Jarvis says.

Many companies looking for a competitive edge in their sales and service operations are finding themselves in the same boat, searching for an able technology partner. Whether they're putting wireless access into customers' hands or enabling complex sales processes with highly sophisticated e-commerce capabilities, many companies are partnering with less-established software firms to reap the benefits of innovation, responsiveness and leading-edge technology that these start-ups offer.

If you had asked Bill Mumford last year if he would intentionally choose to work with a start-up to beef up the sales capabilities of his company's Web site, he would have said no. But after creating a 45-page request for proposals, reviewing the responses of two dozen companies and then asking four finalists to create a proof-of-concept demo, that's exactly what Mumford and his team at Tektronix Inc. decided to do. And even with the full knowledge of the risk they assumed, they haven't regretted it.

"Comerget has been very flexible, very open to input and willing to modify the architecture of their product to meet our customer needs," says Mumford, e-commerce manager at the \$1 billion testing, measuring and monitoring company in Beaverton, Ore. "We would have preferred to work with a multi-billion-dollar corporation that had done this 50 times already. But our primary goal was to maintain the customer brand experience with Tektronix. It's part of what we had to deal with."

So Tektronix chose Comerget Technologies Inc., a Redwood City, Calif.-based provider of business-to-business e-commerce software, over established firms such as Oracle Corp., Trilogy Inc., SAP AG and Siebel Systems Inc., mainly for its ease of use and good fit with Tektronix's own work culture.

Stay Ahead of the Competition

"The benefits [of start-ups] are their level of energy and enthusiasm and wanting to make things work," says Charles Young, solution technology manager at Hewlett-Packard Co. Young says he chose to work with The Cybrant Corp. in Mountain View, Calif., because it was the only company that offered the right technology to automate HP's complex sales process. "Their focus is on us and making the project successful. That was the feeling I got from them every day," Young says.

And to the companies that go the start-up route, it's the competitive edge — not the size — that matters.

"We wanted to be upfront with using technology innovations and servicing our customers," says Kamalesh Dwivedi, CIO at ADC Telecommunications Inc., a \$3.3 billion broadband equipment and services provider in Minneapolis. But when the company looked around a year ago for a vendor that could help it give customers order-status information via a handheld computer or cell phone, there weren't a lot of choices. It partnered with privately held wireless start-up Air2Web Inc. in Atlanta. "It was our attempt to get a leg up on the competition," Dwivedi says.





BY WORKING WITH NEWCOMER Everypath, Alaska Airlines was able to speed deployment of its wireless project "months faster than we could have done ourselves," says Steve Jarvis, vice president of e-commerce.

Air2Web Inc.

www.air2web.com

What's the edge? Supports all wireless devices and works with all major markup languages.

"Size doesn't matter. Even with large companies, you don't know if they'll continue to exist or not."

That doesn't mean companies aren't taking

precautions. "We knew it was a risk," Mumford says. That's why Tektronix insisted on having vendor finalists build demos "to show their product did what we needed it to do and prove it can do it on our site," he says.

Tektronix's system enables customers with procurement software from the likes of Pleasanton, Calif.-based Commerce One Inc. and Sunnyvale, Calif.-based Ariba Inc. to use these systems when

purchasing hardware and software from Tektronix that need to be configured to particular specifications. "Procurement software has naturally focused on where the bulk of procurement is: pens, pencils, paper and the like. It does not handle configurable products well," Mumford says. The Tektronix system presents the end user with a configuration tool at the manufacturer site, which ensures that the customer is choosing compatible components.

Tektronix minimized risk by making sure it could work with the individual members on the Comerget team and targeting the vendor's software to a specific application. "The tool we were choosing was focused on the problem that had to be solved now," Mumford points out. "It had a known set of objec-

No Stone Left Unturned

Few companies enthusiastically turn to a start-up to solve a business need, but sometimes after scouring the market, they're happy they did.

At Hewlett-Packard, for example, solution technology manager Charles Young needed a partner to help automate the company's very complex sales process. When customers came to HP to purchase an application, they needed help sizing the application, planning the environment and getting a ballpark price on what the infrastructure would cost. Prior to automating this task, "we used to gather data out in the field and send it to the engineer, who would do the sizing and determine the resource requirements to run the application," Young says. "The

engineer would design the computer systems and create a diagram to send to the configuration center, which would arrange a parts list and generate a quote." The whole process took anywhere from two days to a week to complete.

Young's goal was to cut the whole process down to one hour. "That meant there was a lot of engineering knowledge to be put into a tool, and that knowledge was different for every application you were selling," he says.

Young found that many companies came from the product configuration angle, which was too simplistic. Others offered guided selling systems, but these were based on predefined selections, and HP needed a more dynamic product-design system. Knowledge management systems could capture and store knowledge but weren't as effective at applying that knowledge. Artificial intelligence systems required that every possible scenario the user might

tives; it wasn't a five-year development process. Even if Comerget does a 180 and goes off to do something else, we have a solution that's solving our needs."

The company planned to measure the configurator's return on investment by looking at order volumes and comparing sales force quotes from before and after the implementation. However, "ROI went out the window when the business fell off the edge" following the terrorist attacks on Sept. 11, Mumford says. "The economy is so overriding that we're trying to figure out [the ROI question] ourselves."

Comerget Technologies Inc.
www.comerget.com
What's the edge? Provides an out-of-the-box tool kit that can be implemented quickly and integrated with many types of back-end systems.

"We didn't invest a lot of money all at once," says Dwivedi. So while the system, which went live in April, will initially be rolled out to a subset of the company's 900 account managers, it may eventually be extended to ADC's 2,000 engineers to trigger billing procedures, as well as to employees for self-service applications.

ADC also did its homework before signing on the dotted line, researching Air2Web's venture capital funding, management credentials and the viability of its business plan. "If it's a newer organization, it's smart to do some checking into its business plan," says Roswell. "What are their business goals? Do they have a quick exit strategy, or do they intend to be in business for a while?"

Despite the risks of working with start-ups in the sales and service space, many companies agree that there are ways to minimize risk and that the benefits make the remaining risk worthwhile. Indeed, it's hard to say in this unpredictable climate whether even the established vendors will be around. "We keep monitoring the situation," says Dwivedi. "Whether it's Air2Web or AT&T, we don't know who will get acquired, bought or merged." ▀

Brandel is a freelance writer in Newton, Mass.

Quick Link

For more resources on using technology to power your company's sales effort, check out: www.computerworld.com/q?24761

come up with be captured, "which would be impossible for us to do," Young says.

Finally, he considered newcomer Cybrant because another group at HP had used the company for a hardware configuration project. "I realized it would provide the raw foundation of what we needed to do," Young says. "It could capture logic, it was easy to maintain, and it was based on something called truth tables," which cut down the number of rules you need to apply. In November 2000, Young handed Cybrant a detailed specification and asked for a proof of concept. "In January, we had put together the software components that were able to actually deliver that functionality," he says. In August, HP launched the system, which has not only met but also exceeded the original goal of one hour – it delivers in 20 minutes.

- Mary Brandel

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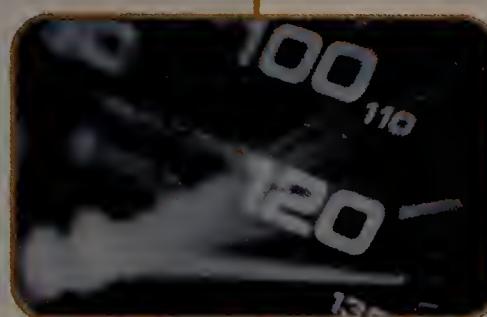
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Emerging players helped these companies reach out to customers with technology that their marketing departments use to dig through valuable data and communicate efficiently over the Web. By Stacy Collett

WHEN HONEYWELL INTERNATIONAL Inc., a \$25 billion technology and manufacturing company in Morristown, N.J., drastically cut back on travel spending last year, even sales and marketing trips were curtailed. One Honeywell group in South Bend, Ind., feared that the cutback would jeopardize its work with a prospective customer in England.

But with the help of browser-based Web meeting services from start-up PlaceWare Inc. in Mountain View, Calif., Honeywell was able to meet with the customer virtually, share information daily and win the contract. Since then, the technology has saved Honeywell hundreds of thousands of dollars in travel expenses, and it's now being used for meetings and online learning.

These days, it's hard to beat technology that saves the company money. For marketing departments, that means finding software that helps companies stretch their Web investments. Many companies also want software that can perform customer analysis, guided selling and product configuration to get more out of what they've already spent. And it also means opening the lines of communication between marketing and IT departments to clearly convey expectations and technical realities.

Start-ups are a viable option because they offer niche expertise, personalized attention and lower prices, compared with established players. Here's some advice on the risks and rewards of betting on the newcomers.

Have a Contingency Plan You Could Finish on Your Own

Crossmark Holdings Inc., a consumer packaged goods services and marketing company in Plano, Texas, wanted software that could bridge the separation among its thousands of customer contacts by cross-referencing relationships and affiliations. But speed was a problem.

The marketing department was intrigued by start-up NeoCore Inc. The Colorado Springs-based com-

pany has developed an XML database management system that eliminates physical database design and can store and index XML data on the fly. But the IT department was less enthusiastic. The idea of not designing a complete database upfront that would encompass all of its potential uses attacked the fundamental beliefs held in IT, recalls John Thompson, president of Crossmark's performance group.

NeoCore Inc.
www.neocore.com

What's the edge? Stores and indexes all XML data on the fly, allowing companies to quickly react to changing business environments.

case, you don't have to do that," he says.

As NeoCore's first client, Crossmark initially struggled with implementation because "you don't know what you don't know," Thompson says. But after a year of work, NeoCore's system is up and running, and Crossmark has just upgraded to Version 2.

The firm has worked with emerging companies before and has taken measures to protect itself. For instance, Crossmark stipulates that if the start-up fails, it keeps the software, license and source code.

"We felt confident enough that we could keep the engine running" whether NeoCore survived or not, Thompson says.

Find a Partner That Understands Your Objective

Murray Hill, N.J.-based Dun & Bradstreet Inc.'s Zapdata division sells business leads and information to other companies, serving about 6,000 to 7,000 registered users each month. Four years ago, the division developed its own application for sending automatic responses via mail and fax to customers, based on their inquiries. But when Internet services were added in 1999, the old system wouldn't scale.

"We wanted to support a bigger program without adding resources," says Tom Gaither, vice president of customer marketing at Dunn & Bradstreet. He also wanted to work with a company that had "thought this through as much as we had, but had the development organization to put a reliable product together."

After several weeks reviewing the players in this niche — mostly newcomers — Zapdata went with start-up Revenio Inc. in Burlington, Mass., because its application could handle multiple channels, in-

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MARKETING

Connecting With Customers



cluding e-mail, fax, telesales and direct marketing, and could be installed in-house, not hosted. More important, "they made us comfortable that they understood the full potential of these applications. That ended up making the choice," Gaither says. A solid business plan and adequate funding were also part of the equation, he adds.

Gaither advises companies considering using a start-up's applications to feel comfortable with the leadership of the company, investigate all the options and know what you want. "You can do any company a disservice by not being clear," he says. In return, start-ups give extra attention to clients that understand their application's objectives and provide valuable feedback.

Since installing Revenio's software a year and a half ago, the number of registered Zapdata users who

Revenio Inc.

www.revenio.com

What's the edge? Allows for managing and automating customer interactions over time and across any marketing channel.

focus or be acquired between the time it's selected and the point when the customer sees benefits.

"We tell companies, 'If you're going to go with a small vendor, make sure you get payback in 12 to 18 months,'" says Erin Kinikin, a customer relationship

management analyst at Giga Information Group Inc. in Cambridge, Mass. "That's how long you can count on that company surviving on their current funding and focusing on the problem you're trying to solve."

Take Low-Cost Risks That Won't Break the Bank

Other companies with less mission-critical marketing needs are turning to start-ups simply because they're less expensive than more established players.

Teradyne Inc., a \$1.8 billion supplier of testing equipment for the electronics and telecommunications industries, was looking for an application for its

Bend Without Breaking

From a start-up's view, the temptation to snag a Fortune 500 client may be great. But what could bring a young company down is a customer that attempts to change a start-up's vision so drastically that it loses perspective.

"You've got to do your research and know what your site objectives are and how the objectives of a start-up fit in," says the business development vice president at a major news network, who asked not to be identified. "You're going to have the most respect for a company that says, 'That's not part of our mission' – and just walks away."

The network was looking for a low-cost, multidimensional application that could measure how visitors at its Web sites use

We felt confident enough that we could keep the engine running [whether NeoCore survived or not].

JOHN THOMPSON (LEFT), PERFORMANCE GROUP PRESIDENT, CROSSMARK HOLDINGS

customer-facing Web site that could provide product specifications, share drawings and access complex documentation and shipping status. The Boston-based company chose NetVendor Inc. in Atlanta because its application was tailored for the electronics industry. Michael Schmidt, IT manager at the Teradyne Connection Systems division, says the firm could have gone with a more established player, but cost was a big factor.

"With most of the other players, you're talking million-dollar investments," says Schmidt. "[NetVendor's cost] was low enough that if it turned out to be a mistake, we would chalk it up to learning about the technology and look at it in another two years." However, NetVendor's product has been working successfully at Teradyne since January.

Schmidt says not to expect a fully baked product from any start-up. Instead, it's important to understand the company's vision, he adds. Also, evaluate the people and understand the financing.

Though there are risks involved by going with a start-up over established players, Thompson says, a calculated risk could be worth it. "Companies migrate to newer technologies," he says. "Whether they're from new or old companies, there are no guarantees." ▶

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Quick Link

For more resources on customer relationship management tools that can help your company's marketing efforts, check out: www.computerworld.com/q?24798

e-mail or print articles and pass them on to others who haven't used the sites. Measuring those additional eyeballs could mean more sponsorship opportunities and more ad dollars.

The marketing staff brought a list of players, both new and established, to the IT department, which evaluated the offerings. Together they chose Clickability Inc. in San Francisco for its low cost and extra attention.

"When you're a big site working with a start-up, they give you their best people to make sure they don't miss the opportunity," says the vice president. Because the product isn't mission-critical, the network was willing to take a chance on a newcomer. "If the product failed or there was a level of overpromising, we could put up a Band-Aid solution or just undeploy," he says.

- Stacy Collett

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Data warehousing and analytical tools from emerging players are helping companies leverage their huge stores of data for financial gain.

By Melissa Solomon

WHEN RICKY CORONEL, a project manager at Nike Inc., was charged with finding a new data warehousing tool in 1999, he didn't take his mission lightly. Coronel needed a system that would let the \$9.5 billion Beaverton, Ore.-based shoe and sports apparel maker quickly generate a variety of financial reports requested by its divisions around the world.

He looked at products from start-ups and established vendors and ultimately settled on DecisionPoint for Financials from start-up DecisionPoint Applications, also in Beaverton. It was the only product that offered everything he needed: It's off-the-shelf, flexible, easy to implement and comes with a high level of support. "They made me feel like I'm their most important customer," says Coronel.

As the economy continues to weaken, data warehousing and analytical tools that help companies reduce business expenses and enhance revenue are finding a comfortable niche, says Robert Anderson, a research director at Stamford, Conn.-based Gartner Inc.

"Now more than ever, enterprises need to leverage the massive stores of operational data found within [enterprise resource planning] systems and

begin exploiting it for competitive advantage," he says. "The pendulum needs to swing from expense control alone to . . . increasing profits."

Take Advantage Of a Nimble Start-up

Mark Dickelman, vice president of mobile commerce and wireless at Bank of Montreal Group of Cos. in Quebec, was looking for a tool that could

analyze delivery costs and help pinpoint inefficiencies so the bank could support additional channels of electronic delivery while lowering costs across the board.

He says he was impressed with the time it took to implement Austin, Texas-based 724 Solutions Inc.'s Financial Services Platform.

"Despite the challenges of being first to market with a new technology, we were able to launch in under six months," Dickelman says. There were any number of possible "showstoppers" along the way, he says, but the project turned out to be a success, and Dickelman says he would recommend the company to his colleagues.

"Hindsight is always 20/20," he says, "but there are very few things that could or would be changed."

Craft an Airtight Contract

Even customers that have been satisfied in past dealings with start-ups have concerns about signing on with a technology newcomer. In fact, Coronel had previously worked with a start-up that folded during a sales force automation project, so he questioned DecisionPoint's long-term viability. "That was always a concern," he says. "But we looked at the product, and it looked mature."

To be on the safe side, Coronel says he had a contract drawn up that was

"mutually beneficial, but favorable for Nike." When working with any vendor, but start-ups in particular, Coronel suggests hiring someone who can anticipate problems with the vendor relationship and negotiate an ironclad contract. "[Hire] a good negotiator and somebody who does contracts really well . . . to minimize any risks," he says.

Find the Product With an Edge

When Linda Brett, a business intelligence architect at Royal Bank of Canada in Toronto, was looking for a tool to analyze the financial performance of the company's portfolio of products, she considered both start-ups and established vendors. Mountain View, Calif.-based Alphablox Corp.'s product stood out because it wasn't traditional, she says.

Alphablox Corp.

www.alphablox.com

What's the edge?

Integrates Web-based applications directly into business processes and across transaction systems, enabling real-time, cross-functional analysis.

"It was architected for the Web, as opposed to some other technology that had been rearchitected but wasn't quite what we were looking for," says Brett. "Our users had

some set ideas as to what they wanted this to look like and be. And a lot of other products weren't customizable."

Alphablox 3 offers real-time Web-based data analysis, so data can be analyzed on the fly, with no delay in the time it takes to input and cleanse that data, says Gartner's Anderson.

The product was also relatively quick and easy to implement, adds Brett.

Because Alphablox 3 is so intuitive, flexible and inexpensive compared with competing products, Brett says she'd recommend it to others, even in today's economic climate. "I hope [Alphablox has] what it takes to make it through, because they have a very good product," she says.

Quick Link

For a news brief with analyst perspective on 724 Solutions' latest strategic partnerships, go to: www.computerworld.com/q?24600

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We have a head for

These upstart companies are helping to lower IT's total cost of ownership on the desktop by reducing support needs and monitoring hardware and software. By Julekha Dash

OWERING TOTAL COST OF OWNERSHIP was a key reason why Mike Grimm, former chief technology officer at Dallas-based HQ Global Workplaces, took a chance on a start-up.

In September last year, the \$550 million office outsourcing provider began using Dreamservice, an enterprise desktop management service from Fremont, Calif.-based Everdream Corp. Instead of shelling out \$7 million to purchase 2,500 PCs and software, HQ is paying Everdream a monthly fee to replace the bulk of its PCs with Dreamservice and to provide consistent software and daily backups. The project is expected to be completed in March.

Clients who use HQ's office space "want state-of-the-art PCs, including software and daily backups," says Grimm. In addition, the company went

through 51 mergers and acquisitions of regional executive suites last year, resulting in inconsistent technology among desktop PCs. Using the subscription-based desktop service will allow HQ to reduce operating expenses by 20% by eliminating the company's internal help desk and other support staff.

"A lot of companies are afraid to manage the desktop because it's hugely labor-intensive," notes Jeb Bolding, a senior analyst at Enterprise Management Associates in Boulder, Colo.

When HQ began its search for a subscription computing service, Everdream's "all-in-one" service was unique in the market, says Grimm, who has since left HQ and joined Everdream.

To protect against the risks of working with a start-up, Grimm signed on Everdream for a 30-day pilot test, during which the vendor deployed a few hundred machines and kept HQ employees up to date with daily status reports. Grimm also spoke with analysts, venture capitalists and Hewlett-Packard Co., one of Everdream's key partners.

"Initially, the different parts of my team were divided," he says. "IT people in general can quite often have a very cynical attitude [toward] service firms." To reduce skepticism, Grimm involved every IT division in status meetings.

Firms like Computer Associates International Inc.

SERGE BLOCH

and Tivoli Systems Inc. are "relatively weak on the desktop," leaving companies like Everdream to carve a niche in the desktop management space, says Bolding. "More and more customers need automation. Updating software is now manually intensive."



MIKE GRIMM's decision to outsource enterprise desktop management will let HQ reduce operating expenses by 20%.

and Tivoli Systems Inc. are "relatively weak on the desktop," leaving companies like Everdream to carve a niche in the desktop management space, says Bolding. "More and more customers need automation. Updating software is now manually intensive."

Tony DeVoto, Windows NT systems administrator at Montvale, N.J.-based Volvo Finance North America, agrees. He began using enterprise configuration management software from Woodland Park, Colo.-based Configuresoft Inc. a

year and half ago as a troubleshooting and compliance tool. Though DeVoto doesn't have any dollar estimates, he says the software lowers ownership costs by monitoring

software and hardware, making it easier to manage systems and detect problems.

While other companies offer systems management, DeVoto chose Configuresoft because its product met the company's exact specifications, he says. ▀

Dash is a freelance writer in Charlottesville, Va.

Quick Link

Read about how U.S. Robotics teamed with start-up Network Data Systems to set up the IT infrastructure at its new corporate headquarters: www.computerworld.com/q?24391



Saving Money On the Desktop



These guys used to be cutting edge, too.

InfoWorld

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Bob Bickel, CTO, HP Middleware Division, Hewlett-Packard Company
Marge Breya, Vice President, Sun ONE, Sun Microsystems
Frank Campagnoni, CTO, GE Global eXchange Services
Dana Gardner, Research Director, Internet Infrastructure, Aberdeen Group
John Kunze, President and CEO, Plumtree Software
Jack Ozzie, Co-founder, Vice President of Development, Platform and Developer Services, Groove Networks
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The Power to Know™



Technology start-ups are under intense scrutiny from investors and customers. While employees learn to live with slimmer benefits packages and used cubicles, executives must learn how to make customers and investors feel safe. By Robert L. Scheier

CUSTOMER TIM CHAMBERS SEES fewer start-ups lining up to pitch him on snazzy new multimedia tools.

CEO Jim Acquaviva sees a board room of investors with a litany of pointed questions.

Venture capitalist Promod Haque sees ramshackle cubicle partitions where well-appointed furnishings might have stood.

It all started with the dot-com crash and resulting crunch in capital spending, and it has now taken a turn for the worse with the events of Sept. 11 and signs of an honest-to-goodness recession.

Equity investments in venture-backed companies fell 21% to \$8.2 billion between the first and second quarters, the fifth straight quarterly drop, according to market research firm VentureOne Corp. in San Jose. Venture capital firms say that they're funding only those start-ups that can quickly deliver proven return on investment to their customers and that they're scrutinizing start-ups far more diligently before opening their checkbooks.

The bad news for IT is that there are fewer companies developing innovative products for the likes of Sony Pictures Digital Entertainment, where Chambers is senior vice president of the Advanced Platform Group. Chambers' group is on the lookout for technology that can help the subsidiary of \$58.5 billion Sony Corp. combine its movies, TV shows and games into broadband entertainment offerings.

"We're at a point right now of kind of an overreaction to the dot-com meltdown," he says. The good news for IT is that the start-ups left standing are likely to have more unique technologies, stronger management and deeper pockets than many of those pitching customers a year or two ago. And with the

economy so tough, they're more willing to trim prices or make other concessions to win business from customers.

Here's what some of this year's emerging companies are doing to save money, squeeze cash from investors and gain the confidence of IT managers.

Slow Down the Burn Rate

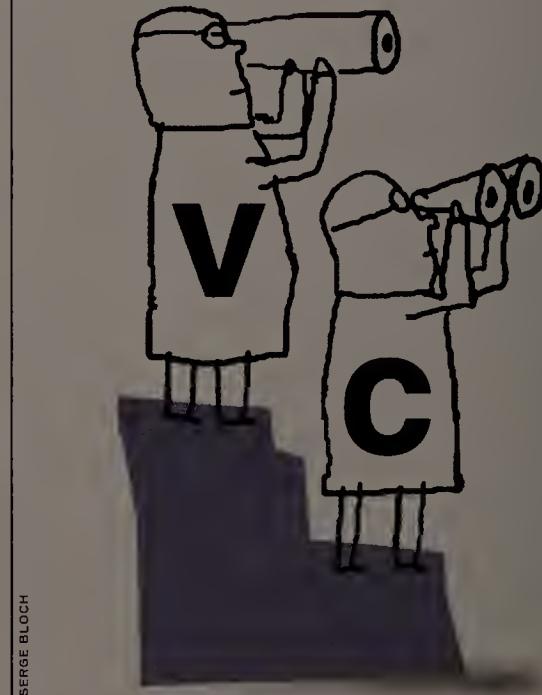
A company's burn rate refers to how quickly it spends its investment money. Investors want the flame turned down — way down. "That's the first topic in most of our board meetings," says Acquaviva, CEO of Kada Systems Inc. in Burlington, Mass. Kada, founded last year, claims to have developed a Java Virtual Machine small enough to allow handheld devices to run more robust enterprise applications than before.

Acquaviva is a veteran of start-up scrutiny, having co-founded application development tools vendor Revelation Technologies Inc. in 1987. Two or three years ago, he says, venture capital firms would have pushed him to "hire staff as fast as you can, get as much of the team together as you can and gain market share," in the belief that profits would eventually follow.

Now investors in a second or third round of funding want to see a "fully funded" business plan, say observers, meaning that the current round of cash will be the last required before the company be-

comes profitable. Kada, which has already raised \$5 million, is "getting very, very difficult questions and an enormous amount of scrutiny" from investors about everything from its

FUNDING



SERGE BLOCH

technology to the overall wireless market as it seeks another \$10 million in funding, says Acquaviva.

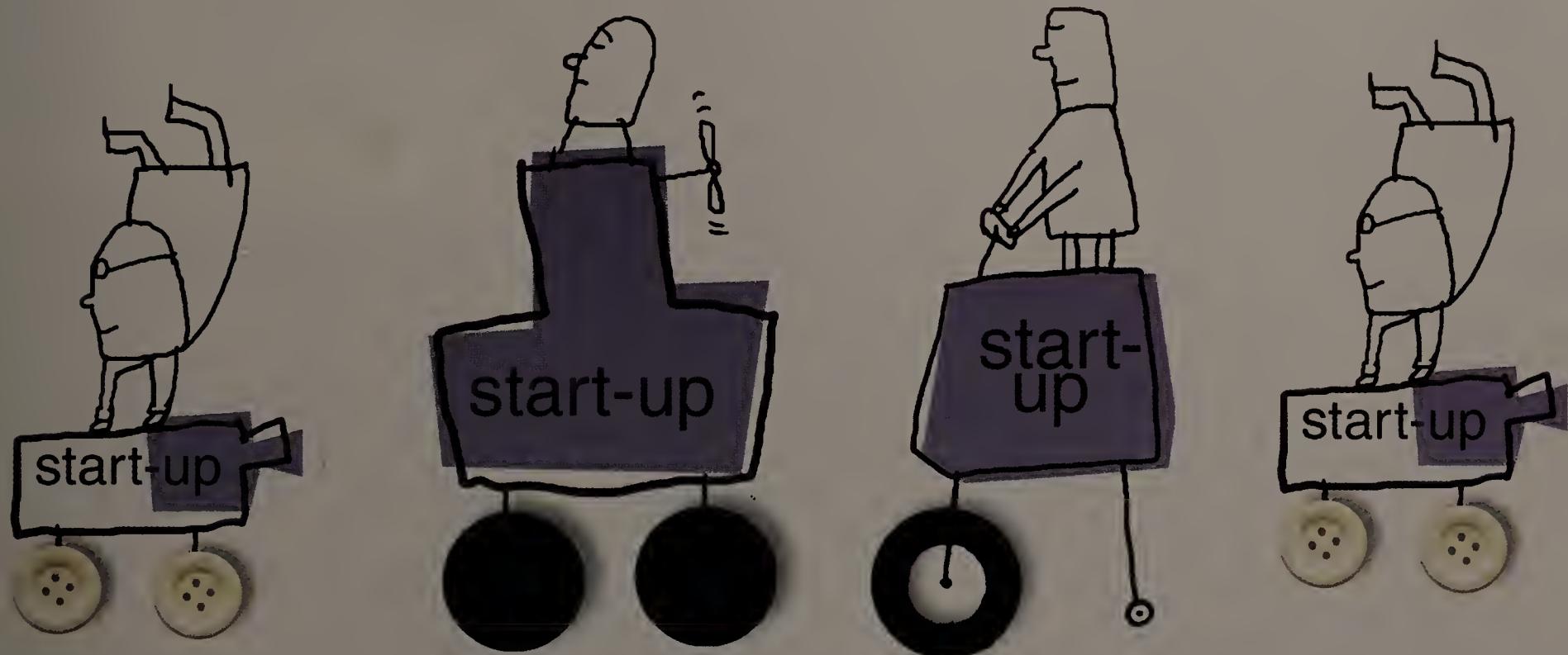
Some investors dole out funds only when a start-up reaches milestones, such as completing a successful product or reaching a certain revenue level, says Doug Robertson, a former entrepreneur and now a principal at Crescendo Ventures Inc., a Palo Alto, Calif., venture capital firm.

Change Hiring Strategies to Suit Market

Start-ups are also rethinking their hiring strategies as the market changes. Kada had expected most of its revenue to come from selling software development kits. Instead, both IT customers and resellers, such as Cisco Systems Inc., want to use Kada's wireless technology bundled with their own products or services and pay Kada only when those products

All Eyes Upon Them

EMERGING COMPANIES 2002



or services begin making money, says Acquaviva. As a result, he says, Kada is focusing on hiring top-notch technical staff to complete current projects before ramping up sales and marketing to attract new customers.

NetMotion Wireless Inc., a Seattle-based developer of wireless remote access software, has also slowed sales hiring while it figures out through which channel — direct or resellers — is best to sell its software. With most of its heavy-duty engineering team hired since its founding in March 1999, Mellanox Technologies, a Santa Clara, Calif., developer of chips for InfiniBand (a high-speed computer architecture designed to replace today's PCI bus) is now hiring more marketing and sales staff.

Mellanox Technologies

www.mellanox.com

What's the edge? Makes chip sets to ease development of InfiniBand products.

Besides postponing or shifting hiring, start-ups are making do with slimmer benefits packages or used cubicles for their employees.

"For some of these folks, it's very hard to

imagine that [they're] going to sit in a cubicle that's got stains on it," says Haque, a managing partner at Norwest Venture Partners in Palo Alto, Calif.

At NetMotion, "the benefit plan isn't quite as rich" as it had been at WRQ Inc., from which NetMotion was created this spring, says President and CEO Craig McKibben, and "we still don't have any administrative help."

Show ROI for Customers and Investors

To a far greater extent than a year ago, investors and customers demand a solid return on investment from start-ups. "That whole concept of ROI — we haven't heard that term in the last five years," says Haque. But now his firm screens to see which companies to fund, placing a heavy emphasis on making sure their products and services will deliver solid

NetMotion Wireless Inc.

www.netmotionwireless.com

What's the edge? Software makes it easier to wireless-enable Windows applications.

grilling him specifically about the business benefits of NetMotion's software and how the company plans to sell it. Investors acknowledged that "we had a deep technology which can accomplish a lot of things," says McKibben. But he says he had to explain to them how it would fit into the market.

value to customers.

NetMotion snagged its first \$8 million round of funding in March, in the midst of the funding slump. It was a long, six-month haul, says McKibben, with investors

Investors are taking the long view now. They look for multiple exit strategies, or ways to recover their money, if a start-up never has a lucrative public stock offering. Before investing, says Acquaviva, venture capitalists also spend more time analyzing which firms might be willing to buy a start-up, and for how much, if the start-up never does go public. ▀

Scheier is a freelance writer in Boylston, Mass.

Quick Link

Want to do further research on start-ups? For resources to help you dig into the financing and management of emerging companies, check out: www.computerworld.com/q?24670

Inspecting Credentials

A start-up that has secured cash from a venture capital firm has been put through the paces. But there's still plenty that IT managers can look for when deciding to invest in their technologies.

Promod Haque, a managing partner at Norwest Venture Partners, says IT customers should evaluate not only the strength and experience of the start-up's management team but also whether its investors have the money and experience to shepherd it through an economic downturn.

Managers, investors or board members who have been through bad times as well as booms can help impose a healthy discipline on spending and introduce the start-up to larger distribution or manufacturing partners, observers say. Board members at recently failed start-ups "have a little more fear in their eyes" now, says Alex St. John, president, CEO and co-founder of online entertainment technology company WildTangent Inc.

Along with the proper venture capital and a strong management team, IT managers should look for start-ups with 12 to 24 months of cash on hand, recommends Doug Robertson, a former entrepreneur and now a principal at Crescendo Ventures.

Tim Chambers, senior vice president of the Advanced Platform Group at Sony Pictures Digital Entertainment, says he

looks for innovative technology, a trustworthy management team and strong financial backing. But he doesn't have a single litmus test for how many months of funding a start-up must have.

"If they're a short-term partner, as long as they have cash on hand to complete the job, that's fine," agrees Richard Turner, director of interactive marketing at TBS Superstation Inc., a cable TV network in Atlanta. "If they're a long-term partner, then we look at them a little more closely." Turner is using Redmond, Wash.-based WildTangent's Web Driver to boost performance of several interactive games.

Both Turner and Chambers say they have significantly increased their scrutiny of start-ups in the past year but have always played it safe. Both say they have long insisted on protections such as the ability to hire developers from a start-up if the company goes out of business. But neither of them reports a major problem from the failure of a start-up.

In fact, the downturn has made it easier for customers as well as investors to negotiate tough terms with those start-ups left standing. "It's looking a bit more like the early '90s than the mid- to late '90s," says Jim Acquaviva, CEO of Kada Systems. "IT organizations, and the vendors who [are resellers], are using these economic times as a lever in their negotiations. They know that business is tough to get."

- Robert L. Scheier

With little venture cash to go around, the technology start-ups earning funding are the ones with credible business plans and value for IT. By Pimm Fox

FOR MANY TECHNOLOGY START-UPS, it's gotten a lot harder to make the grade with venture capital firms. Funding is now reserved for established start-ups that need additional money or for those with focused business plans that detail revenue and profit projections within a short time frame. For IT buyers, that decline in equity investment spells good news: Their current vendors won't be abandoned by their backers and will be held more accountable for generating real, ongoing revenue.

What a difference a year makes. Established companies with venture arms previously believed they had a golden touch for creating winning companies, but they have beaten a hasty retreat. The amount of money they invested in the first half of this year was \$353 million, compared with \$3.8 billion in the first half of last year, according to a PricewaterhouseCoopers MoneyTree Survey conducted in partnership with San Francisco-based research firm VentureOne Corp. (see story at right). Initial funding (seed and Series A rounds) for start-ups declined — they received only about 15% of the total invested — from the first quarter's record low.

FUNDING

"The raw dollar increase in later-round funding shows venture capital firms are standing behind their existing portfolio companies. They're focusing more resources — both money and time — on building those businesses," says Tracy T. Lefteroff, global managing partner of the venture capital practice at PricewaterhouseCoopers in San Jose.

The message to emerging companies looking for funding is clear: Show a profit quickly. "I think the patience of some investors is exhausted," says Kirk Walden, national director of the MoneyTree Survey at PricewaterhouseCoopers. "Burn rates are being slashed to the bone." The present climate is a bit of a

catch-22, he says. "To admit you gave too much money too early is to also admit you didn't apply the money efficiently to the business model," Walden says. "You had companies using start-up money to advertise at the Super Bowl; sometimes they spent more on stunts like that than they had in revenue."

"The old reality of the market was that five out of 10 new companies would go belly-up. Two or three would do OK, and one or two would do well," he says. The heady days of 1999 changed that model; as many as eight of 10 companies languished while two were successes. Ironically, that translated to more risk for IT buyers because the chances of a company flailing were greater. Investors didn't mind that 80% of their investments were write-offs because the remaining 20% netted them such incredible returns.

Currently, with a more conservative investment mentality, the emerging companies that are receiving funding are viewed as more serious contenders with staying power. "Total annual venture capital investment of over \$20 billion — the current run rate —

would be over all historical norms, except for 1999 and 2000," says Walden.

Current investment levels indicate that about 1,500 companies will get funding. "What's so bad about that?" asks Walden. There's a new, healthy respect for risk from venture capitalists and entrepreneurs, he says. ▶

By the Numbers

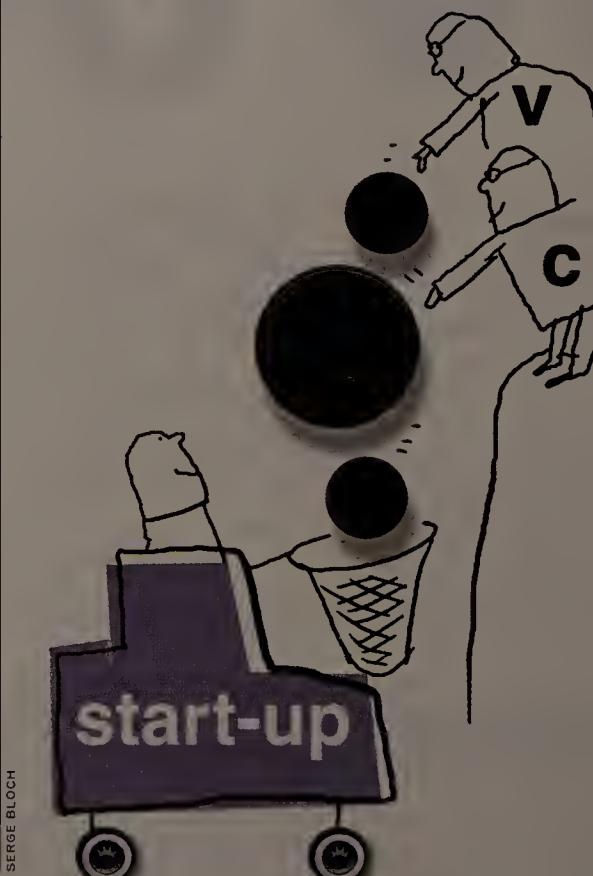
Venture capital money is scarce. Of the \$8.2 billion invested in start-ups in the quarter ended June 30, \$1.8 billion was earmarked for communications companies, \$1.6 billion for software firms and \$563 million went to information services, according to the MoneyTree survey. Of these, software, infrastructure, database and IT business service took more than \$4.5 billion. Surely a hefty sum, but in the same quarter a year earlier, the venture capital backing for Internet companies was \$13.8 billion. Of that total, Internet companies absorbed the lion's share: about \$5.6 billion in additional and new funding. (Note: Figures don't add up to \$8.2 billion due to market segment overlap).

The overall \$2.2 billion decrease in start-up funding from the first quarter to the second quarter can be attributed to a drop of \$1.2 billion (from \$3 billion to \$1.8 billion) in the communications and networking segment. Nearly every subset of communications and networking was hit hard, but fiber optics and photonics companies, which had received the majority of investments for the past year, were the biggest losers. Cuts in the business services segment and the software market accounted for the remaining \$1 billion.

For the much-watched Internet-related investments, which cut across all industry segments, the descent continued in the second quarter. Funding fell to \$5.7 billion, a 28% decline from the prior quarter and the lowest in two years. All Internet subsectors dropped. Most notable was Internet infrastructure, which fell 45% to \$1.3 billion. Internet-related software investments held up the best, falling just 8% to \$1.7 billion.

And while the total venture money for all companies represented a decline of 21%, that was less than the 41% decline recorded in the previous quarter. In the second quarter, 669 firms received funding, down from 752 in the first quarter.

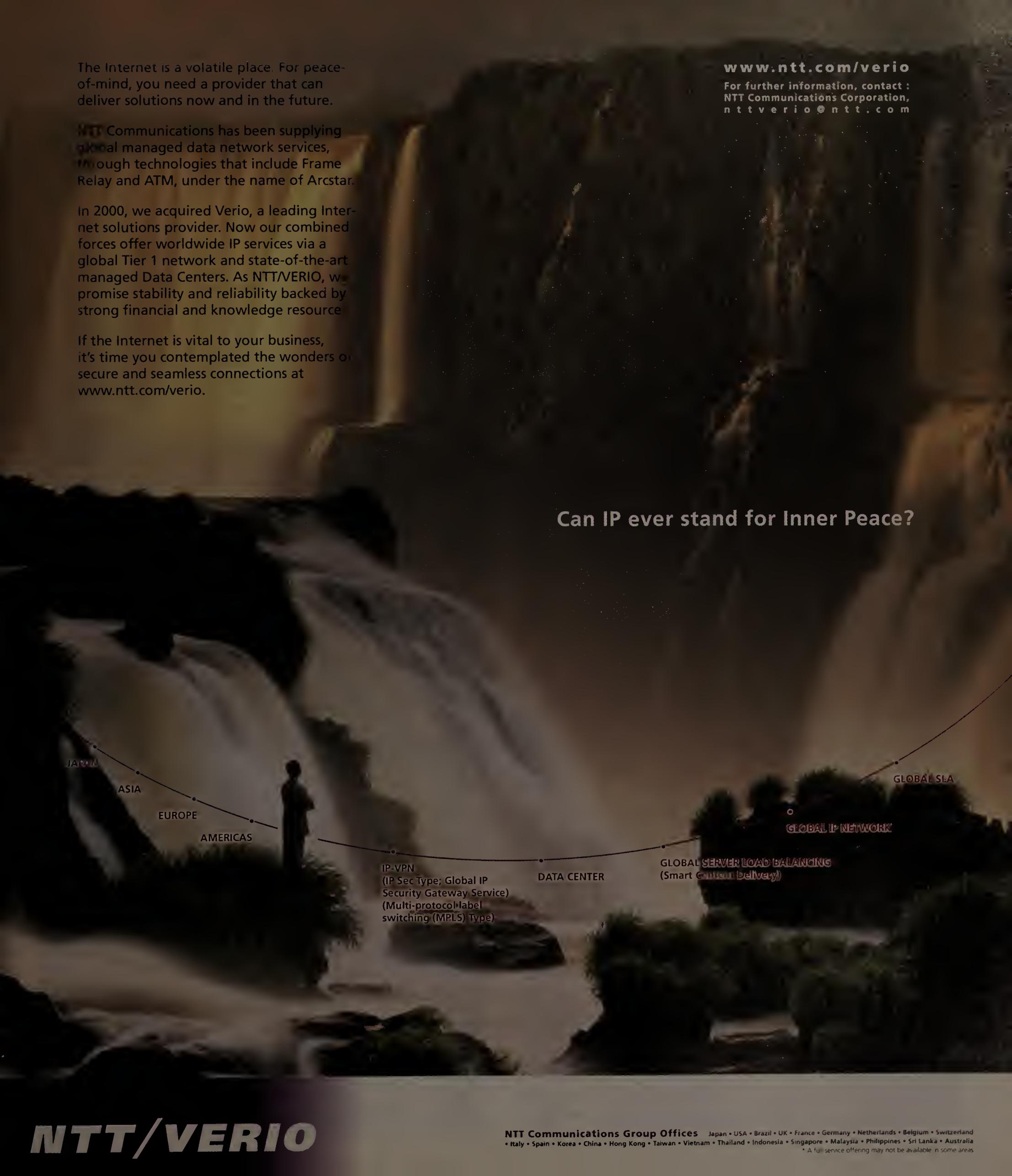
— Pimm Fox



Quick Link

For a look at some of the start-up standouts that netted big funding this year from the venture capital community, check out: www.computerworld.com/q?24535

Who's Getting The Money?



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EMERGING COMPANIES 2002

The Top 100 to Watch

How We Picked Them

To identify and select the Top 100 Emerging Companies for our special section, *Computerworld* invited companies to nominate themselves on our Web site from May 28 through June 29.

To qualify, companies had to be corporate-focused, for-profit ventures with less than \$250 million in revenue and founded no earlier than 1996. Qualified companies also had to have an innovative product or service available by Dec. 31, 2001, as well as customer references. To be considered, companies had to have a management team in place (rather than one person acting as CEO and vice president of marketing, sales and so on).

Nomination forms were categorized by market segment. A panel of *Computerworld* editors

reviewed the forms and selected finalists in each segment. The finalists' nomination forms were then sent to a panel of IT industry influencers — senior-level executives who are both providers and users of IT.

They are the following: Jon Carow, director of global IT sourcing at Wyeth Pharmaceuticals; Cathy Hotka, vice president of IT at the National Retail Federation; Barry Kadets, CIO and vice president of information systems at Bacou USA Inc.; André V. Mendes, vice president and CIO at Pluvita Corp.; Larry Peterson, network vice president for corporate technical services at Gelco Information Network Inc.; John Puckett, vice president and general manager of wireless and Internet strategies at Polaroid Corp.; Kim

Ross, CIO at Nielsen Media Research Inc.; Bob Schwartz, vice president and CIO at Panasonic Management Information Technology Services Co.; Priscilla Tate, director of the Technology Managers Forum; John Voeller, chief knowledge officer, chief technology officer and senior vice president at Black & Veatch; and Patrick Wise, vice president of e-commerce at Landstar System Inc.

The panel of IT influencers rated the finalists on the following characteristics:

- The company and its technology offer demonstrable value to corporate IT operations; the product or service addresses problems or challenges that IT managers face.
- The company is innovative; the product or ser-

vice presents a new and creative approach to an IT issue and is viable.

- The company demonstrates signs of an ability to execute its strategy (revenue, revenue growth, funding and a stable management team).

These scores were totaled. Companies with the highest scores overall were selected for our Emerging Companies to Watch in 2002 list and placed into the most appropriate market category. They are listed here in alphabetical order by market segment.

— Allison Wright



To find out more about what this year's Emerging Companies offer IT, visit our Web site: www.computerworld.com/q?ta1270

COMPANY NAME	LOCATION	WEB ADDRESS	CEO	YEAR FOUNDED	NUMBER OF EMPLOYEES	PRODUCTS OR SERVICES
Application services, development tools						
Curl Corp.	Boston	www.curl.com	Robert A. Young	1998	140	Surge 1.0 Software Environment, The Surge Lab Integrated Development Environment Beta Version 4.0, Curl Content Language Version 1.0
Kada Systems Inc.	Burlington, Mass.	www.kadasystems.com	Jim Acquaviva	2000	29	Kada Mobile Platform for Java 1.5, Kada VM, Kada Mobile Developer Studio Alliance Program
Mutek Solutions Ltd.	Westwood, Mass.	www.mutek.com	Yochi Slonim	1996	120	Black Box Flight Recorder for Software 3.5, AppSight User, Server and Manager editions 3.5, AppSight Code 3.0
Relativity Technologies Inc.	Cary, N.C.	www.relativity.com	Vivek Wadhwa	1997	175	RescueWare for ADW1, RescueWare 6.0
SBi Inc.	Salt Lake City	www.sbionline.com	Ned Stringham	1997	750	Enterprise and supply chain management systems
Surebridge Inc.	Lexington, Mass.	www.surebridge.com	Stephanie Khurana	1997	250	Application implementation, management and hosting services
Customer relationship management software						
Astute Solutions	Columbus, Ohio	www.astutesolutions.com	Joe Sanda	1996	40	PowerCenter, PowerCenter Email and PowerCenter Chat
The Cybrant Corp.	Mountain View, Calif.	www.cybrant.com	Dave Buchanan	1999	100	Cybrant Business Velocity 3.1, Cybrant Commerce Velocity 3.1, Cybrant Solutions Architect 3.1
Empirix Inc.	Waltham, Mass.	www.empirix.com	Jeff Hotchkiss	2000	400	Multimedia Test Ensemble, Hammer IT Contact Center Test System, e-Test Suite
EnvoyWorldWide Inc.	Billerica, Mass.	www.envoyworldwide.com	Ailain Dast	1998	50	EnvoyXpress, EnvoyProfiles, EnvoyXtend
Orsus Solutions Ltd.	Mountain View, Calif.	www.orsus.com	Aryeh Finegold	1999	140	Orsus Uno (formerly iGlue/Wireless and iGlue/Web)
Revenio Inc.	Burlington, Mass.	www.revenio.com	Andrew Payne	1999	50	Revenio Dialog 2.0
StayinFront Inc.	Fairfield, N.J.	www.stayinfront.com	Thomas R. Buckley	1996	525	Visual Elk VE 8.1, Web Works for WAP 1.0, Pocket Elk 1.0
Data management tools						
DecisionPoint Applications Inc.	Beaverton, Ore.	www.dpapps.com	Yorgen Edholm	1996	60	DecisionPoint for Financials 7.0, DecisionPoint for CRM 2.0, DecisionFlow 1.5
Integrated Development Enterprise Inc.	Concord, Mass.	www.ide.com	Richard S. Moore	1998	142	IDweb, IDpartner, IDfinancials
Kalido Ltd.	London	www.kalido.com	Andy Hayler	2001	57	Kalido 6.1, Kalido ERP 6.1, Unilever MIS 6.1
Lumigent Technologies Inc.	Concord, Mass.	www.lumigent.com	Lev Vaitzblit	2000	50	Log Explorer for SQL Server Enterprise Edition 2.1, Log Explorer for SQL Server Professional Edition
NeoCore Inc.	Colorado Springs	www.neocore.com	Tim Dix	1997	50	NeoCore XMS Version 2.0
Scale Eight Inc.	San Francisco	www.s8.com	Dick Watts	1999	140	Global Storage Service 2.0
Syncronex Inc.	Redmond, Wash.	www.syncronex.com	Bruce Leader	1997	27	Syncronex ViewPoint 4.0, Syncronex ViewPoint - Wireless Edition 4.0
Troika Networks Inc.	Westlake Village, Calif.	www.troikanetworks.com	Alan Skidmore	1998	125	Zentai Controller, Path Command Plus for Zentai 2.5, SAN Command Enterprise for Zentai 1.5

EMERGING COMPANIES 2002

COMPANY NAME	LOCATION	WEB ADDRESS	CEO	YEAR FOUNDED	NUMBER OF EMPLOYEES	PRODUCTS OR SERVICES
E-commerce software and services						
Altra Energy Technologies Inc.	Houston	www.altra.com	Paul Bourke	1996	220	Altra Market Place, Altra Market Tools, Altra Market Solutions
Asera Inc.	Belmont, Calif.	www.asera.com	David Murphy	1998	350	Asera eBusiness Operating System Release 4.1.2, Asera Sell-Side Applications Release 4.1.2
Azerity	San Jose	www.azerity.com	Stephen Gold	1998	120	ProChannel Collaborative Solution Suite 4.0, ProChannel Catalog 4.0, Global Price Management 4.0
Callidus Software Inc.	San Jose	www.callidussoftware.com	Reed Taussig	1996	225	TrueComp Manager 2.5, TrueComp Viewer 2.5, TrueComp Modeler 2.5
Comergent Technologies Inc.	Redwood City, Calif.	www.comergent.com	Jean A. Kovacs	1998	170	Comergent Distributed E-Business System Release 5.0
Engenia Software Inc.	Reston, Va.	www.engenia.com	Jeffrey C. Crigler	1998	40	Engenia Collaboration Services Platform 2.0, Engenia Partner OnRamp 1.0
MetraTech Corp.	Waltham, Mass.	www.metratech.com	Scott Swartz	1998	85	MetraBill 2.0, MetraView 2.0, MetraPartner 2.0
NerveWire Inc.	Newton, Mass.	www.nervewire.com	Malcolm Frank	1999	220	Strategy and planning services, systems integration services
NetVendor Inc.	Atlanta	www.netvendor.com	Sean McCloskey	1996	130	NetVendor Sales Collaboration 1.0, E.mbrace 4.2, NetVendor Configurator
Trigo Technologies Inc.	Brisbane, Calif.	www.trigo.com	Thomas Reilly	2000	55	Trigo Enterprise
Visual Insights	Naperville, Ill.	www.visualinsights.com	Douglas A. Cogswell	1997	110	eBizInsights 2.0, eBizInsights CS, eBizInsights XL
Internet-based applications						
Clickability Inc.	San Francisco	www.clickability.com	John Girard	1999	35	CMware, IMware
Fast Search & Transfer ASA*	Oslo	www.fastsearch.com	John M. Lervik	1997	260	Fast Web Search 1.0, Fast Mobile Search 1.0, Fast Intranet Search 3.0
Groove Networks Inc.	Beverly, Mass.	www.groovenetworks.com	Ray Ozzie	1997	209	Groove 1.0, Groove Enterprise Network Services, Groove training
Mirapoint Inc.	Sunnyvale, Calif.	www.mirapoint.com	Satish Ramachandran	1997	180	Mirapoint Message Director 2.9.1, M2500 Internet Message Server 2.9.1, Mirapoint Internet Directory 2.9.1
MS2 Inc.	Mountain View, Calif.	www.ms2.com	Jeff Hudson	1998	105	MS2 Accelerate 2001 Release 7.0
NaviMedix Inc.	Boston	www.navimedix.com	Timothy Hargarten	1998	130	NaviNet 4.0
OutlookSoft Corp.	Stamford, Conn.	www.outlooksoft.com	Craig Schiff	1999	85	Enterprise Analytic Portal 1.0, Financial Planning and Analysis 1.0
PlaceWare Inc.	Mountain View, Calif.	www.placeware.com	Barry James Folsom	1996	240	PlaceWare Conference Center 3.0, PlaceWare Event Series, PlaceWare Forum 3.0
Plumtree Software	San Francisco	www.plumtree.com	John Kunze	1997	270	Plumtree Corporate Portal and Plumtree Gadget Web services
Portera Inc.	Campbell, Calif.	www.portera.com	Gary L. Steele	1998	250	Portera ServicePort
Spotfire Inc.	Somerville, Mass.	www.spotfire.com	Christopher Ahlberg	1996	150	Spotfire DecisionSite 6.0, DecisionSite for Lead Discovery, Spotfire Array Explorer 3.0
Tellme Neworks Inc.	Mountain View, Calif.	www.tellme.com	Mike McCue	1999	250	Tellme Voice Application Network
Mobile and wireless						
2Roam Inc.	Redwood City, Calif.	www.2roam.com	Tom Jackson	1999	100	2Roam Catalyst Server 2.1, 2Roam Nomad Publisher 1.5, 2Roam Wireless Value Added Services
724 Solutions Inc.*	Austin, Texas	www.724.com	John Sims	1997	685	Wireless Internet Platform 3.0, Financial Services Applications 3.2, Alerts Platform 3.0
Air2Web Inc.	Atlanta	www.air2web.com	Sanjoy Malik	1999	160	Mobile Internet Platform Version 2.0
Antenna Software Inc.	New York	www.antennasoftware.com	Peter Semmelhack	1998	40	Antenna ServiceTools Version 1.5, AntennaTools and Antenna Tools Mobile for Clarity Version 1.0, Antenna Tools for FieldPro Version 2.5
Everypath Inc.	San Jose	www.everypath.com	Venkatesh Shukla	1998	180	Everypath Server 3.0, Everypath Studio 3.0, Everypath AlwaysOn 1.5
MobileSys Inc.	Mountain View, Calif.	www.mobilesys.com	David Coelho	1996	110	MobileSys Network, MobileSysMX 2.0, Omnidrowser
NetMotion Wireless Inc.	Seattle	www.netmotionwireless.com	Craig McKibben	2001	34	NetMotion Mobility 1.0, NetMotion 3.0
Tenrox	Laval, Quebec	www.tenrox.com	Rudolf Melik	1996	75	Projeca 6.5, Office Timesheet 6.5, InChange 6.5
Network/systems management, equipment						
BlueStar Solutions Inc.	Cupertino, Calif.	www.bluestarsolutions.com	Thomas F. Kelly	1999	200	Fully hosted and managed SAP solution, remote managed operations, support
Business Layers	Rochelle Park, N.J.	www.businesslayers.com	Izhar Shay	1999	90	eProvision Day One
Configuresoft Inc.	Woodland Park, Colo.	www.configuresoft.com	E. Alexander Goldstein	1999	60	Enterprise Configuration Manager 3.6, Enterprise Configuration Manager Windows 9x Migration Planner 1.0
GiantLoop Network	Waltham, Mass.	www.giantloop.com	Mark Ward	2000	300	Enterprise Optical Networking
iPass Inc.	Redwood Shores, Calif.	www.ipass.com	Michael Mansouri	1996	225	Global Broadband Roaming, iPassConnect PDA, iPass Corporate Access
Linux NetworX Inc.	Sandy, Utah	www.linuxnetworx.com	Glen Lowry	2000	55	Evolocity, ClusterWorX 2.0, Ice Box
NetQoS Inc.	Austin, Texas	www.netqos.com	Joel Trammell	1999	35	NQVisionQuest, NQReporter 2.0, NQAnalyzer 2.0

*Companies that are publicly held. All others are private.

EMERGING COMPANIES 2002

COMPUTERWORLD November 26, 2001

COMPANY NAME	LOCATION	WEB ADDRESS	CEO	YEAR FOUNDED	NUMBER OF EMPLOYEES	PRODUCTS OR SERVICES
Network/systems management, equipment						
NetReality Inc.	Santa Clara, Calif.	www.net-reality.com	Ian Raab	1997	100	WiseWan Enterprise, WiseWan/MNS 4.0, WanTel module for the WiseWan NAPS 4.0
Network Data Systems	Rolling Meadows, Ill.	www.network-data.com	Al Siders	1997	75	Converged Network Solution Version 3.0, Network Optimization Solution Version 3.0, Mobility Solution Version 3.0
NOCpulse Inc.	Sunnyvale, Calif.	www.nocpulse.com	Paul Santinelli	2000	50	NOCpulse Command Center
Sitara Networks Inc.	Waltham, Mass.	www.sitaranetworks.com	Malik Khan	1996	200	QoSWorks QW1.9, QoSArray QA1.2, QoSDirector QD1.4
SmartPipes Inc.	Redwood City, Calif.	www.smartpipes.com	Hank Nothhaft	1999	210	SmartPipes Global IP Services 1.0, WorldCom IP VPN Customer Directed 1.0
Surgent Networks Inc.	Austin, Texas	www.surgent.com	Nagi Rao	1999	125	Surgent eQ2500 rack unit server
Taqua Systems Inc.	Hyannis, Mass.	www.taqua.com	Robert Steinkrauss	1998	240	Open Compact Exchange 1.2
WIDComm Inc.	San Diego	www.widcomm.com	Hiep Pham	1998	140	Bluetooth Communications Software Solution for Embedded Systems 1.1, Bluetooth Communications Software Solution for Windows 1.1, BlueGate 2100
Security products and services						
Captus Networks Corp.	Woodland, Calif.	www.captusnetworks.com	Richard G. Helgeson	2000	91	CaptIO 1.3, CaptIO-G21.3, CaptCC Global Administrator 1.0
Counterpane Internet Security Inc.	Cupertino, Calif.	www.counterpane.com	Tom Rowley	1999	104	Managed Security Monitoring 1.0
Courion Corp.	Framingham, Mass.	www.courion.com	Christopher Zannetos	1996	125	PasswordCourier 4.5, Profile Builder 4.5
e-Security Inc.	Rockledge, Fla.	www.esecurityinc.com	Nicola Sanna	1999	75	Open e-Security Platform Version 3.0, e-Security Administrator Workbench Version 2.1
eSniff Inc.	Englewood, Colo.	www.esniff.com	Thomas Donahue	1999	30	eSniff 1100, eSniff 1000
Guardent Inc.	Waltham, Mass.	www.guardent.com	Maria Cirino	2000	180	Managed security services
Keyware Technologies Inc.*	Woburn, Mass.	www.keyware.com	Francis Declercq	1996	275	CAS1.0, Smart Cards Suite 1.0, Access Control
NIKSUN Inc.	Monmouth Junction, N.J.	www.niksun.com	Parag Pruthi	1997	150	NetDetector 1.1, NetVCR 2.0
Obliv Inc.	Cupertino, Calif.	www.oblix.com	Gordon Eubanks	1996	200	Obliv NetPoint 5.0, Obliv Publisher 5.0
PentaSafe Security Technologies Inc.	Houston	www.pentasafe.com	Douglas J. Erwin	1997	325	VigilEnt Security Manager Version 3.0, VigilEnt Policy Center Version 2.0, VigilEnt Security Agent for AS/400 and iSeries Version 8.0
Top Layer Networks	Westboro, Mass.	www.toplayer.com	Ron Brumback	1997	160	AppSafe 3500 3500, SecureWatch Version 1.0, Intrusion Detection Service Version 1.0
Tripwire Inc.	Portland, Ore.	www.tripwire.com	W. Wyatt Starnes	1997	158	Tripwire for Servers 2.4, Tripwire Manager 2.4, Tripwire for Web Pages 1.0
Supply chain management						
Arzoon Inc.	San Carlos, Calif.	www.arzoon.com	Farid Dibachi	1999	130	Arzoon LIFE 3.1
Full Degree Inc.	Palo Alto, Calif.	www.fulldegree.com	Mark Bonham	2000	16	Next-generation content management system
Optiant Inc.	Somerville, Mass.	www.optiant.com	Marcus Ruark	2000	30	PowerChain Inventory 3.1
Prism Visual Software	Port Washington, N.Y.	www.prismvs.com	Lorraine Keating	1997	6	ServQuest, RoadQuest, ServMeter
Rapt Inc.	San Francisco	www.rapt.com	Tom Chavez	1998	75	Rapt Buy 2.0, Rapt Sell 1.0
SPS Commerce Inc.	St. Paul, Minn.	www.spcommerce.com	Archie Black	1996	125	SPSCommerce.net, online catalog service
SupplySolution Inc.	Southfield, Mich.	www.supplysolution.com	Chris Moritz	1998	150	i-Supply 3.2, i-GetIt, SupplySolution Global Infrastructure
Web infrastructure servers, software and management						
Alphablox Corp.	Mountain View, Calif.	www.alphablox.com	Polly Sumner	1996	202	Alphablox 3.0, SpreadSheet Blox
Chutney Technologies Inc.	Atlanta	www.chutneytech.com	Anindya Datta	1999	40	Chutney PreLoader 3.1
Equinix Inc.*	Mountain View, Calif.	www.equinix.com	Peter Van Camp	1998	315	Equinix GigE Exchange, Direct Interconnection service
Everdream Corp.	Fremont, Calif.	www.everdream.com	Gary Griffiths	1998	180	Everdream Complete, Everdream Direct
Mellanox Technologies	Santa Clara, Calif.	www.mellanox.com	Eyal Waldman	1999	160	InfiniBridge 1.0
PictureIQ Corp.	Seattle	www.pictureiq.com	Bill McCoy	1998	51	TransForce 1.0, PhotoForce
Rackspace Managed Hosting	San Antonio	www.rackspace.com	Graham Weston	1998	150	Managed hosting, managed firewalls and managed e-commerce solutions
RLX Technologies Inc.	The Woodlands, Texas	www.rlxtchnologies.com	Pat Collins	2000	140	RLX System 324
Satmetrix Systems	Mountain View, Calif.	www.satmetrix.com	Andre O. Schwager	1997	100	Satmetrix Customer Version 6.6, Satmetrix E-commerce Version 6.6, Market Stat Version 1.0
Telenius Corp.	Rolling Meadows, Ill.	www.telenius.com	Gordon Reichard Jr.	1999	220	WebStructure, Rapid Start Hosting Platform, Managed Security
Tonic Software	Austin, Texas	www.tonic.com	Brian Phillips	1999	75	Tonic 1.9
WebEx Communications Inc.*	San Jose	www.webex.com	Subrah S. Iyar	1996	500	Meeting Center 4.0, OnStage 2.0, OnCall 2.0
WildTangent Inc.	Redmond, Wash.	www.wildtangent.com	Alex St. John	1998	135	WildTangent Web Driver 2.0
Wily Technology Inc.	Burlingame, Calif.	www.wilytech.com	Dick Williams	1998	80	Introscope 2.5

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Due Diligence

SURVIVAL — THAT'S WHAT WE WANT. Face it, right now we're not really looking for cutting-edge anything. We all just want to survive until business improves.

Funny thing is, we can't do that alone. We need help. That's why doing business with emerging technology companies is such an opportunity — and a challenge. They may have exactly the hardware, software or services that will help us make it through this rough patch and give us a fast start once things pick up again.

But to help us survive, they'll have to become our partners — to depend on us the way we depend on them. That means we've got to be able to trust one another. And with budgets tight and survival at stake, that's not easy.

How do you build that trust, so that you and your partners can make sure you all profit from your mutual success?

Check references. Call other customers and ask the CIO where the po-

tential pitfalls lie, not just what a swell little company this is. Call the financial references, then check to see how these venture capitalists are doing with their other investments. If it takes signing a nondisclosure agreement, get the OK from your legal beagles to do it.

Yeah, due diligence takes time, and it's no fun compared with a flashy demo. But it's a lot cheaper than getting beat up if a supplier goes Chapter 7 on you.

Ease into it. If it's a services vendor, you'll get maximum benefit if you off-load lots of work right away. If it's software, a fast transition sounds great. But moving fast is where your biggest risks lie. Your CEO won't thank you for anything risky with a small vendor — and users won't be happy if the CFO cuts your budget and you have to roll things back.

Escrow source code. Not long ago, we could safely assume good technology would be snapped up if a small company went under. Now, that's less certain. Make sure you'll have access to the source code — or if it's a service vendor, records and documentation about your systems — in case your vendor goes belly-up.

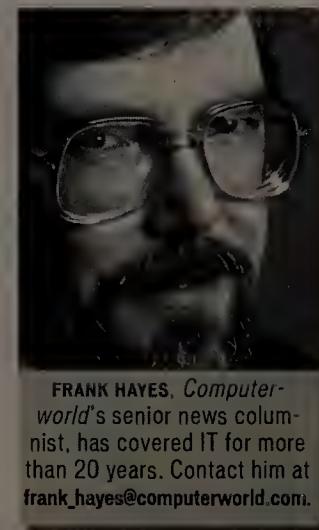
Pay on time. Negotiate a clause that says the vendor will be paid in a timely fashion, with worth-their-while penalties if your payables department doesn't deliver.

Your accounting people won't like it — they want the option of being slow to pay bills, too. But it's the only way your IT shop can guarantee you won't be squeezing the life out of an emerging company that you would like to depend on.

Leverage enthusiasm. If your IT staffers think a product or service is a good idea, they'll spend their own time learning the skills for it, which cuts the real cost. If they think it's a bad idea, they'll drag their heels, making it more expensive — which you can't afford right now. Talk to your people and factor their enthusiasm into your plans.

Check the road map. They do have a plan going forward, right? You do, too — don't you? Make them drill into their road map for you. Find out how it will play in terms of your plans and other IT providers. If it'll be a better fit in a year or two, dip a toe in today — but just a toe.

Negotiate, negotiate, negotiate. Forget the boilerplate — take the time to work out a win-win deal. Get source-code escrow and performance goals in there. Give them a longer-term agreement and a timely payment clause. Remember, you want a partnership, not hostility — and you want a deal that helps assure that you and your emerging partner have a better chance to survive. ▶



FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank.hayes@computerworld.com.

Business Basics

Percentage of this year's Emerging Companies that have made acquisitions:

21%

Percentage of this year's Emerging Companies that have been spun off from a parent company:

11%

Percentage of this year's Emerging Companies that have been part of a merger:

3%

Number of public companies on this year's Emerging Companies list:

5

Going Public

How the public companies on the Emerging Companies list are faring:

Fast Search & Transfer ASA

Oslo Stock Exchange symbol:	FAST
Initial day of listing:	June 21, 2001
First day open:	\$1.40
First day close:	\$1.40
Nov. 1 close:	\$1.30

Keyware Technologies

Nasdaq Europe symbol:	KEYW
Initial day of listing:	June 23, 2000
Shares offered:	866,785
Actual offer price:	\$7.25
First day open:	\$7.30

First day close:	\$7.25
Oct. 31 close:	55 cents

724 Solutions Inc.

Nasdaq symbol:	SVNX
Initial day of listing:	Jan. 28, 2000
Proposed offer price:	\$20 to \$22
Shares offered:	6 million
Actual offer price:	\$26
First day open:	\$75
First day close:	\$71.81
Nov. 1 close:	\$1.49

Equinix Inc.

Nasdaq symbol:	EQIX
Initial day of listing:	Aug. 11, 2000
Proposed offer price:	\$10 to \$12

Shares offered:	20 million
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Actual offer price:	\$12
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First day open:	\$12.75
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First day close:	\$13.13
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Nov. 1 close:	49 cents
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WebEx Communications Inc.

Nasdaq symbol:	WEBX
Initial day of listing:	July 28, 2000
Proposed offer price:	\$12 to \$14
Shares offered:	3.5 million
Actual offer price:	\$14
First day open:	\$17.25
First day close:	\$33.06
Shares offered:	3.5 million
Nov. 1 close:	\$29.11



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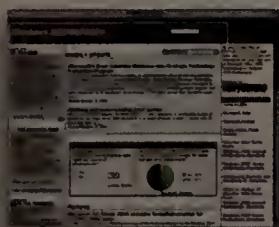
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Senior Technical Consultant sought by company in Denver, CO specializing in business software solutions to work in Downer Grove, IL and other unanticipated job sites in the US. At a senior level, provide technical support and assistance to corporate clients. Specifically, engage in post sales implementation of supply chain and other software applications. Integrate new software applications with other legacy software and relational database management systems. Engage in product configuration and functionality testing. Create models to replicate the client's business processes in order to test and debug new software applications. Customize and modify software applications and engage in project management as required. Requires Bachelor's in industrial engineering, computer science or a related field; two years of supply chain technical consulting experience, including application integration; working knowledge of relational database management systems. 8am-5pm, M-F; \$77,000/yr. (2 openings.) Respond by resume to James Shimada, CO Dept. of Labor & Employment, Employment & Training Division, Tower II, #400, 1515 Arapahoe, Denver, CO 80202, & refer to Job Order Number CO 5008291.

Implementation Architect sought by company in Englewood, CO specializing in software development, sales and services to work in Englewood and other unanticipated job sites in the US. Engage in high level design and development of geographic information systems software applications. The applications are client/server or web based and incorporate relational database management systems. The client/server applications run on Windows NT operating system. Code, test, debug and enhance software applications. Analyze requirements for customization; complete customization, implementation and integration with customer system. Review system architecture, make appropriate recommendations and complete tuning. Design documentation. Provide customer support as needed, and design solutions to customer problems. Utilize Oracle, SOL and proprietary languages in designing and developing the GIS applications. Requires Bachelor's or foreign equivalent in computer science, computer engineering geography or a related field; 1 yr. in designing & developing geographic information systems software. 8am-5pm, M-F; \$72,000/yr. Respond by resume to James Shimada, CO Dept. of Labor & Employment, Employment & Training Division, Tower II, #400, 1515 Arapahoe, Denver, CO 80202, & refer to Job Order Number CO 5007915.

CacheVision is in immediate need of:

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- Systems Engineers to develop innovative hardware using Digital A/V technology using Orcad and other design/debug tools and
- Sr S/W Engineers with strong product definition and project management skills to lead team of S/W Engineers to develop for storage centric entertainment appliances. All positions require a BS/MS in CS/Engg or related field. Competitive salaries. Travel/relocation required. Resumes to Attn: Employment, 1990 Concourse Drive, San Jose, CA 95131 EOE

Computer Support Coordinator sought by company in Denver, CO specializing in higher education (Institution) to work in Denver & other locations in CO. Provide technical support to members of department regarding computer software and hardware issues. Install software and configure computer networks. Troubleshoot and resolve problems that arise with hardware, software, and networks. Enhance, modify, and test existing proprietary software programs. Configure and maintain ORACLE relational database management systems. Design, modify, and update department web page. Use C, C++, DOS, JAVA Script, JAVA, HTML, and other tools in connection with job duties and responsibilities. Requires Bachelor's in computer science or related field; working knowledge in the following areas: providing technical support for software and hardware issues; implementing, testing, and troubleshooting software applications, and DOS. 8am-5pm, M-F; \$36,000/yr. Respond by resume to James Shimada, CO Dept. of Labor & Employment, Employment & Training Division, Tower II, #400, 1515 Arapahoe, Denver, CO 80202, & refer to Job Order Number CO 5008295.

Programmer / Analyst: Plan, design, program, develop and test computer applications using Visual Basic, C++ and AMAC MCL; write on-line programs, creating on-line screens and other technologies; prepare and execute system test plans; formulate plans outlining steps required to develop programs, using structured analysis and design; analyze, review, and alter programs to increase operating efficiency or adapt to new requirements.
 Bachelor's degree in Computer Science, or Software technology required. 40 hrs. /wk.; 8:00am - 5:00pm. \$50,440/year.
 Must have proof of legal authority to work permanently in the U.S.
 Send 2 copies of both resume and cover letter to Illinois Department of Employment Security, 401 South State Street - 7 North, Chicago, Illinois 60605. Attention: Lydia Clarke. Reference Number V-IL-28454-E. NO CALLS. AN EMPLOYER PAID AD.

Compuque Business Software, Inc., a software development and services company located in Plano, Texas needs programmer/analysts for various projects with Fortune 500 companies and in-house software development projects involving client/server software applications utilizing Oracle products on UNIX operating systems. Use OracleForms, OracleReports, PL/SOL, and ProC in the design and development process. Positions require two years of experience designing and developing Oracle software applications using PL/SOL, Pro*C and Developer 2000. To apply, send your resume to Preet Kumar, 2000 North Central Expressway, Suite 115, Plano, TX 75074.

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Several F/T positions open for exp'd Prog/System Analysts and DBA's skilled in some of the following: C, C++, VB, HTML, Java, COM, IIS, ASP; Sybase, SOL Server; Oracle, Developer 2000, SOL, PL/SQL; COBOL, CICS, JCL, DB2 etc. All positions require a BS or foreign equiv with conc. in CS/Engg (any branch) or related field. Highly competitive salary. 70% traveling involved. Send resume to: US HI Tech Solutions, Inc. 1515 Rio Grande, Suite 905 Plano TX 75075

Thomson Financial currently has a position available for Team Manager at our Boston, Massachusetts office. Responsibilities include: management & direct oversight of 8-12 software developers, including staffing, budget and schedule responsibility, and appraisal of team member's performance; mentor and technical review of software engineers; maintain and enhance an N-tier Win32 system that employs a front end based on JavaScript and DHTML, using XML and XSL, middle tier components based on Java J2EE and C++ and relational database technology (Sybase, Microsoft SQL) using JDBC. We require at least a Master's degree or equivalent in Computer Science, Electrical Engineering or related field, 5 years experience in software development on the Win32 platform, which includes the following: at least 4 years experience of web development utilizing COM and relational database technologies, at least 3 years experience in managing teams delivering HTML/DHTML, JavaScript, XML & XSL solutions and at least 1 year experience in UML, VC++ and Java/J2EE Technologies. Experience may be gained concurrently. Please send resumes to: Thomson Financial, Attn: HR, 22 Thomson Place, Boston, MA 02210. Fax: 617-856-5601. We are an equal opportunity employer.

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CLINICAL SYSTEMS ANALYST- Allendale, NJ - A leading company in the reconstructive orthopedic device business is seeking a Clinical Systems Analyst who will perform data analysis using statistical package SAS on PC & VAX environment, write SAS/AF user interface applications & maintain the SAS system. Req'd: Master's degree in CompSci, Statistics or other quantitative discipline. Must have knowledge of statistical analysis/modelling thru advanced academic coursework. Must have knowledge of developing SAS system applications using tools such as SAS/AF, SCL & MACRO thru education/exp. Send resume to: Tina Allen, Stryker Howmedica Osteonics, 59 Route 17 S, Allendale, NJ 07401. REFER-ENCE CODE #SHOBM02.

Software Engineers/ Programmers/ Database/ System Analysts needed by NJ based IT firm. Will need Masters plus exp. Please apply with 2 copies of your resume to H.R. Dept., Techdemocracy, LLC 1426 Cheryl Drive, Iselin, NJ 08830.

Systems Engineer-Target Latin financial institution, integrate software and hardware to conform w/CORE software for 100% operative, analysis of client needs, design system to meet needs, program and integrate software and hardware for multiple work stations & servers; prepare network schematics in Spanish; prepare software in Spanish instruction; write technical manuals in Spanish for distribution to employees; train client personnel in Spanish on-site (travel required) Min. BS or equiv. in Computer Science +3 yrs exp in job offered; exper in Progress Prov, Progress WebSpeed, ODBC, DB2, HTML, VS Basic, C++ Hardware Exp NCR COMTEN, IBM 390, IBM AS/400 AND UNIX. 37.7 hr 9:00am-5:30pm. \$22.49ph. Send Resume to Agency for Workforce Innovation, PO Box 10869, Tallahassee, FL 32302 RE: JOFL#19593.

Software Engineers wanted (mult. openings) by stwr cc. in NYC. to develop next generation software. Sr. Softwr Engrs must be familiar w/compiler design. Softwr engrs to asgn prgm & maint proprietary vector applics. C, C++; knowl of APL & J a plus. Resumes to HR Dept., Aleris, Inc., 41 W. 12th St, NY, NY 10011.

SOFTWARE ENG: Research, design, devel s/ware sys; analyze reqs, determine feasibility, time, cost; formulate, design, direct sys testing, programming, documentation, maint, installation. Prevailing wage: 8a-5p. Req: Masters Electronic/Comp Eng or related & 5 yrs exp or Bach. & 5 yrs exp or as Apps Devel &/or Project Co-ord &/or Proj/Anal. Resumes to: N. Casella, Universal Health Care Serv., 5365 W Atlantic Blv, #503, Delray Bch, FL 33484

PROGRAMMER-ANALYSTS needed to analyze, dsgn, dvlpm, install & test various applics. Apply to Global Consultants, 601 Jefferson Rd, Parsippany, NJ 07054.

Software Engineers/ Programmers/ Database/ System Analysts needed by NJ based IT firm. Will need Masters plus exp. Please apply with 2 copies of your resume to H.R. Dept., Techdemocracy, LLC 1426 Cheryl Drive, Iselin, NJ 08830.

Senior Software Engineer wanted. Must have Bachelor's degree in Computer Science, Engineering, or related field & 5 yrs. computer software development exper. Incl. exper. with C++, Solaris and Object Oriented design. Send resume to Leo Charbonneau, CFO, Pactolus Communication Software, Inc., 69 Milk St., Westborough, MA 01581.

Systems Analyst. \$63K/yr. 8a-5p; 40 hrs/wk. Analyze, dsgn, dvlpm & code s/ware applics using MS-SQL Server Ver. 6, Visual C++ in MS Win envirnmt. Bach or equiv deg in Comp Sci or Engg, Electrical or Electronic Engg, Physics, Statistics or related field of Sci. reqd. 2 yrs exp as Sys/tems Analyst/Dvlper or Prgrmr Analyst. Must have proof of legal auth to work in US. Report or send 2 resumes to: Gwinnett JO# QA 7040547, 1535 Atkinson Rd., Lawrenceville, GA 30043-5601 or nearest DOL Field Svcs Office.

Several computer related positions available for large software development, support and sales company. Degree, technical skills & experience vary per position. Send resume to Kim Voulgaris, MAPICS, Inc., 600 West Cummings Park, Woburn, Massachusetts 01801.

Software Engineer
 Design, implement, test and debug code per design specifications and problem reports using C/C++ and Assembly languages with object-oriented programming techniques and algorithms. Must have MS in CS, EE or related field and 1 yr exp in design and implementation of software features. Send 2 resumes to: Yvette Wischinski, Human Resource Representative, Andover Controls Corporation, 300 Brickstone Square, Andover, MA 01810

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Diversity in Information Technology



Asking successful companies about their diversity strategy frequently brings a moment of silence. For those who are succeeding, valuing diversity is no program of the month. It's a way of operating. "It's central to our business," says Andre Goodlett, associate director of staffing for Kellogg Co. "We do what is needed to attract and retain a pool of talented people. Our customer base is diverse so we make sure we are able to reflect that base and understand it."

One look at **Kellogg's** web site pinpoints the second aspect of the hiring strategy at **Kellogg** — a friendly workplace. For IT professionals the web site represents something else.

Kellogg was among the first food companies to have a web site. Back in 1996 it sported an animated Tony the Tiger. Today, the site and

the business are combining the elves of Keebler and Tony, there's a company store, community service links, games and a link to **Kellogg** Racing. The consolidation of Keebler and **Kellogg** is requiring new IT strategies, including an integrated SAP implementation.

Goodlett says **Kellogg** is hiring at a variety of levels, from PC and database support to leaders and managers for the implementation, which includes the majority of SAP modules. "We're rolling this out on a very aggressive timeline for

all of the **Kellogg** U.S. business," he says. Positions currently open include business and technical analysts, senior programmer analysts, database management and administration.

"We need to attract people who want to work on infrastructure, as well as implement and maintain a large-scale enterprise system," Goodlett adds. "We're doing something new within **Kellogg** so every day presents something different in terms of challenges. That jazzes most people's interest. You can get some immediate gratification because everything we're doing will have a direct influence on the bottomline of the company's performance. There are tremendous opportunities here for gaining valuable experience and grow with us."

For more job opportunities, turn to the pages of ITcareers.

- If you'd like to take part in an upcoming ITcareers feature, contact Janis Crowley, 650.312.0607 or janis_crowley@itcareers.net.
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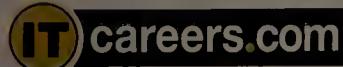
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The MathWorks leads the market in developing and delivering high performance interactive software products such as **MATLAB®** to the engineering and scientific communities. We're increasing our lead by hiring the best people for every job in the organization. We have the following positions available at our offices in **Natick, MA**

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Positions are available for a Program Manager and Product Development Tester with an Atlanta-based technology solutions company. The company architects and designs next generation software for point-of-sale and Internet systems in the retail industry including entertainment, petroleum with convenience or food stores, and restaurants.

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Sr. Systems Analyst/Programmers-Sensormatic Electronics Corporation, Boca Raton, Florida, has multiple openings for Sr. Systems Analyst/Programmers to work with and support BaaN ERP software and sub-systems. Candidates must present a Bachelor's degree in Computer Science, Information Science, Information Systems or Computer Engineering (software emphasis) or related field and 2-3 years experience using BaaN IV. Please apply directly through www.sensormatic.com (employment) by location and reference Job Code AZA1 or send resume and salary requirements to Staffing Department, B-76 at Sensormatic PO Box 5037, Boca Raton, Florida 33431-0837. We are proud to be an EEO/AA employer. M/F/V/D.

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NEWS

Seamless E-Commerce Giving Way to XML/EDI Hybrid

Users face data translation needs but like compromise approach on protocols

BY MICHAEL MEEHAN

THE FIRST round of efforts by e-commerce standards bodies to harmonize XML-based technology with electronic data interchange (EDI) protocols is making the promised world of seamless business-to-business transactions look like a mirage.

Instead, users are likely to be presented with a hybrid approach in which data translation, document mapping and enterprise application integration tools are facts of life.

For example, a joint XML/EDI working group that's developing a common set of core technology components is looking to use XML document wrappers from Open Applications Group Inc. in Marietta, Ga., and modified EDI documents as the standard data

formats for online transactions. The group finished its member comment process last Friday and is preparing to release its first working document for public review.

Balancing Everyone's Needs

Meanwhile, XML-centric document libraries like the Universal Business Language, backed by technology vendors SAP AG, Sun Microsystems Inc. and Commerce One Inc., continue to fight for acceptance. But for some users, the lack of a pure XML-based data format for e-commerce transactions isn't a problem.

Klaus Haidacher, procurement operations director at Siemens Procurement and Logistics Services LLC, an Iselin, N.J.-based subsidiary of Siemens AG, said compromise e-commerce approaches will work best for many companies.

"You cannot expect suppliers to change all their formats," Haidacher said. "They don't make changes like that."

Matt Cordner, director of strategic planning for operations at Bell Helicopter Textron Inc. in Fort Worth, Texas, said standard product codes set by the United Nations will likely have more of an impact on his company's business-to-business activities than XML document standards.

"We want to build to standards where we can, but we tend to wait for them to mature before we make an investment," he said. "So far, we don't see anything out there."

Indeed, vendors have flooded the market with different data formats for XML documents. One effort to help companies deal with the glut was announced last week by a group of users and vendors that's trying to blend XML implementation protocols used in different vertical industries (see story below).

Ken Vollmer, an analyst at

Giga Information Group Inc. in Cambridge, Mass., said the weak economy is also a factor in dampening enthusiasm for wholesale switches to XML-based IT initiatives.

But Robert Glushko, an engineering fellow at Pleasanton, Calif.-based Commerce One, claimed that plug-and-play e-commerce will get bogged down if it relies too much on the plumbing of earlier transaction models, such as EDI.

"It's like going to the moon with a ladder," Glushko said. "It's really good for the first few feet because you don't have to change anything, but you never really get past the roof." ▶

Rival B2B Exchanges Push Common Data Standards

Retail groups seek adoption of content rules by mid-2003

BY MICHAEL MEEHAN

The two business-to-business exchanges dueling for predominance in the retail industry are calling a truce to encourage content providers representing more than 12,000 manufacturers to adopt a common set of data standards.

San Francisco-based GlobalNetXchange LLC and Alexandria, Va.-based WorldWide Retail Exchange LLC last week jointly announced a proposed timetable calling on online catalog developers and other aggregators of product information to support the Global Commerce Initiative's (GCI) business-to-business standards by mid-2003.

The GCI, a group of large companies and trade associations in the manufacturing and retail industries, last year released a protocol setting basic rules for data access and security, message content and the flow of information between trading partners. The two retail exchanges said they surveyed content providers that do work for manufacturers and

found that many are already migrating toward compliance with the GCI's standards, including the use of XML messaging and the data schema defined by the group.

The Broader, the Better

The product data maintained by content and catalog developers is used by retailers in their internal systems, and the exchanges said wider adoption of the GCI standards would help improve data synchronization between companies and make it easier to share information electronically.

Bharat Popat, vice president of product development at GlobalNetXchange, said he expects product ordering and payment activities using the common standards to begin taking off late next year. Officials at the two retail exchanges are aware of e-commerce standardization efforts for different industries, Popat said. But he deemed those secondary to the retail-specific joint effort.

Gale Daikoku, an analyst at Stamford, Conn.-based Gartner Inc.'s G2 unit, said the retail exchanges "are having a tough time getting members to adopt [their] services, so the broader they can make the standards, the better." ▶

Users, Vendors Agree on XML Implementation Model

With so many versions of XML being promoted by different groups, it's no surprise that a standardized method of implementing the would-be technical standard was proposed last week.

The Business Internet Consortium (BIC), a Portland, Ore.-based group of users and vendors, published a conceptual model that targets XML's use in business-to-business applications. The model defines specific protocols and implementation methods that represent a convergence of XML approaches taken by BIC members in different industries.

Group members include Ford Motor Co., The Gillette Co. and Reuters Group PLC, plus vendors Compaq Computer Corp., IBM, Intel Corp. and Microsoft Corp. Terry Spires, a marketing manager at Intel and chairman of the BIC, said more than 250 versions of XML are available, each with subtle differences in the way messages are handled within an application.

For example, Reuters is "intimately involved" with NewsML, a version of XML used to deliver financial and other news online, according to Scott Jeffreys, senior vice president of technology al-

liances at the London-based news and information services company.

Jeffreys, who is chairman of the BIC's customer advisory board, said the guidelines announced last week are meant to solve specific Internet-related problems that users face in day-to-day business operations, instead of defining a standard in an abstract sense.

The BIC's model will be useful to Reuters because the company "not only consumes XML feeds from other companies, but we produce them," he said. "We get to see both sides of the equation."

- Mark Hall



FRANK HAYES/FRANKLY SPEAKING

Bag the Gag Rule

THIS WEDNESDAY MARKS DAY 30 since the Nimda.e worm showed up on the Internet. Microsoft and a few of its security cronies would have us believe that 30 days is about the right amount of time for everyone to shut up about any particular security vulnerability.

The idea, floated by the group after Microsoft's Trusted Computing Forum this month, is that the IT industry should agree on a "grace period," during which the affected software vendor can fix the problem and issue patches without worrying about information on the vulnerability leaking out. After all, what could happen in 30 days?

Well, at the U.S. District Court for the Southern District of Florida, 30 days is long enough to turn the clock back 30 years.

Two days after it was discovered in the wild, Nimda.E hit the court's offices in Miami. By the following Monday — Day 8 — PCs were crashing left and right.

On Day 10, the court reverted to doing everything the old-fashioned, noncomputerized way. It might have been 1971 instead of 2001. Forms were filled out by hand, and clerks used phones instead of networks to get information on defendants and cases in other cities.

By Day 15 — halfway through the 30-day "grace period" — the court's Web site still was not back up, and IT staffers were still cleaning Nimda.E off PCs one at a time.

Oh yeah, keeping a lid on a security problem for 30 days — that'll sure protect us.

But it's not intended to protect us, is it?

Microsoft has a problem, and nobody in Redmond doubts it. Hardly a week goes by without some Microsoft product — Web browser, Web server, office application, e-mail client, operating system — hitting the news because it has a security vulnerability.

But the 30-day gag rule that Microsoft and its tame security partners are proposing won't reduce the risk for the users of those products. It will just reduce the risk to Microsoft's reputation from the weekly public relations problems.

That 30 days isn't just for coming up with a patch. It's an entire month to spin the bad news.

No wonder Microsoft wants the whole industry to take the 30-day pledge. The company with the security problem gets to tell its version

of the story publicly when it issues its patch. Competitors promise to keep their mouths shut for a month after it's discovered.

Meanwhile, nobody is suggesting that crackers will observe any 30-day moratorium after they discover a security hole. Of course they won't — no matter how nicely Microsoft asks them. They'll write their worms, their viruses, their tools and their sample code to exploit whatever vulnerabilities they find.

And in a matter of hours, word of the exploit will reach every creep who wants to break into, corrupt or shut down our systems.

We, of course, won't hear about it from official industry sources for another 29 days after that.

But somehow, we can be pretty sure the crackers will make us aware of it.

And when they do, instead of having the best, most accurate and most complete information on our security exposure, we'll get some kind of vague, limited bafflegab from security experts. It won't keep the bad guys from knowing anything — they'll already have the information.

All it will do is keep us from making informed decisions for ourselves about exactly how severe the risk is, what our security options are and which actions are most appropriate for each situation.

As I write this, they're still cleaning up the mess and reliving the '70s down at the federal court offices in Miami. One user told a reporter, "It's kind of nice not having computers."

Maybe it is for him. The rest of us would rather have what we need to keep our systems running — and not have to wait 30 days for it. ▶



FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank.hayes@computerworld.com.

SHARK TANK

TRY TO REMEMBER Help desk pilot fish gets an urgent e-mail support request from a relatively new hire: "I am trying to print something, and my computer keeps telling me I am out of memory. That seems pretty unlikely, since I just started in July. Help!"

THE RULES AT this university research lab say there has to be at least 100 square feet of office space per person. But when IT pilot fish and lab manager are trying to figure how to cram in as many faculty and staff as possible, there's a problem: Each office in the new facility is just under 150 square feet. "That's OK," manager says. "We'll put three people in every two offices."

TURN THE PAGE This hospital's new decision-support system automatically generates, formats and posts monthly reports to the company intranet, then e-mails a Web link to the users who need to see the report. Great, as far as it goes, user complains to consultant pilot fish. But the report covers only A-L — what about M-Z? Fish in-

vestigates and quickly gets back to user with a proposed solution: "Click on 'Page 2.'"

AFTER REINSTALLING a program on this user's PC for the third time, support pilot fish asks the user to describe exactly what happens before it crashes. User answers, "I run the Uni-stall program, and then it stops working."

IT DIRECTOR PILOT FISH gets a frantic call from the building facility manager — a user's laptop has apparently set off a fire alarm! Fish arrives and re-creates the situation: User pops the laptop out of her own docking station, then redocks at another user's desk. "Apparently, that caused the internal microphone volume to jack up to maximum," fish says. "The feedback was so loud, everybody thought it was the fire alarm and promptly evacuated the building!"

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The 5th Wave



"Someone want to look at this manuscript I received on e-mail called *The Embedded Virus That Destroyed the Publisher's Servers When the Manuscript Was Rejected?*"



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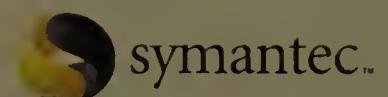
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